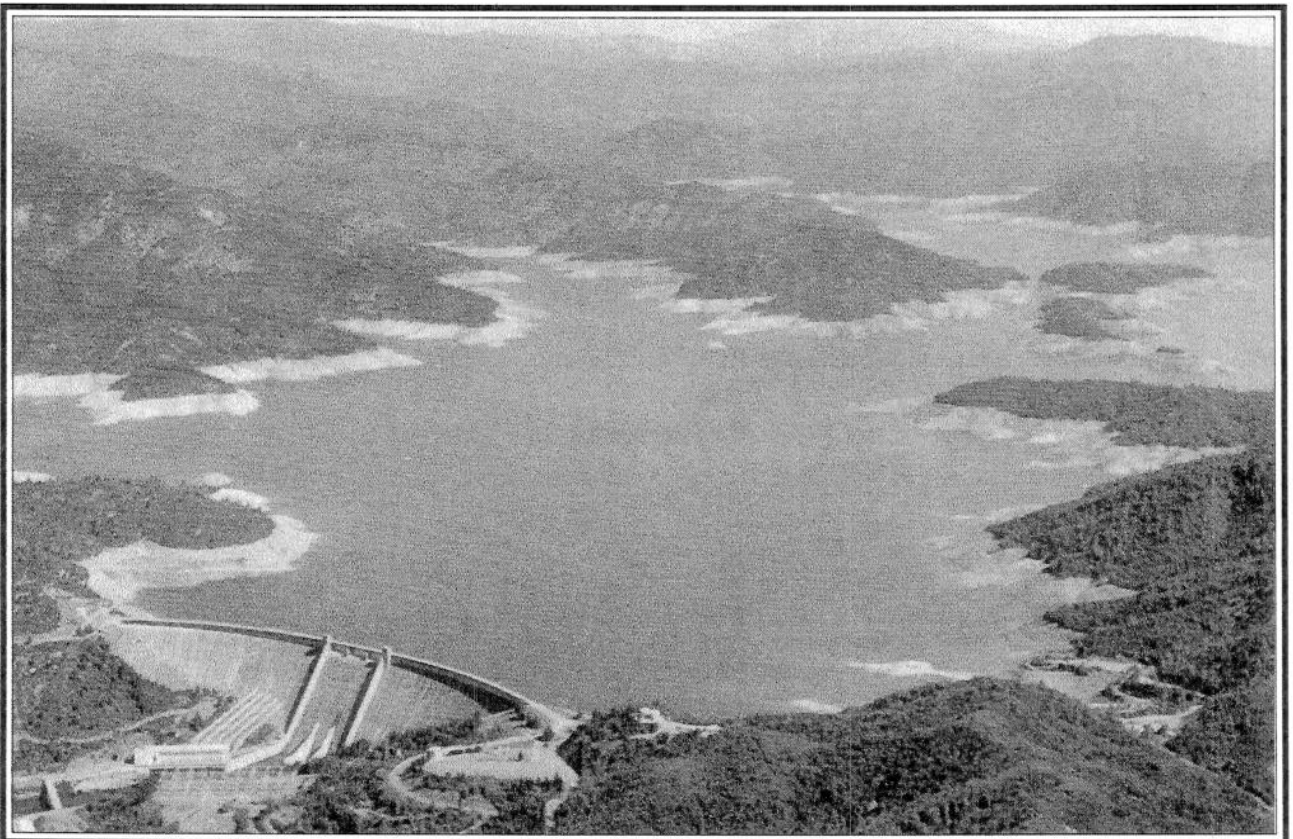


# DROUGHT CONDITIONS IN CALIFORNIA

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SEPTEMBER 1990



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The cover photo shows Shasta Dam and Lake Shasta, near Redding, at the end of August 1990. Maximum water storage of Lake Shasta is 4.6 maf. At the time of the picture, the storage was 1.7 maf, which is 37 percent of capacity and 54 percent of average.

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## Introduction

This report includes information on current drought conditions in California.

The report covers the status of water conditions as of September 1, 1990 and provides information on the overall 1987-1990 drought period. This is followed by water supply and water demand information provided by a survey of approximately 150 water agencies. This survey was originally conducted in March and April 1990 and was updated in August 1990. This report also includes a summary of water conservation actions practiced by over 200 water agencies who are short of normal water supplies.

On October 30, 1990 the California Department of Water Resources will be hosting a 1-day 1991 Drought Contingency Planning Conference. It will be held in the auditorium at 1416 9th Street from 9:00 a.m. to 4:30 p.m. A draft report "Drought Contingency Planning Options for 1991" will be available there for all attendees. A final report will be published in December. For further information please call "The Drought Center" at (800) 272-8869.

## Summary

Thanks to the rains of late May, California is not quite as dry as was expected on May first of this year. The unusually late rainy period produced some runoff increase in the north end of the State and added about 5 percent to the water supply. But water year 1990 remains critically dry, the fourth in a series of well below normal runoff years.

The cumulative impact of four successive years of drought are indicated by the fact that five counties have declared emergencies and for the second time in their history both the State Water Project and the Central Valley Project have been forced to reduce deliveries. The State Water Project cut deliveries to agricultural customers by 50 percent, and the Central Valley Project cut most customers by 25 to 50 percent. The first such disruption in deliveries for both projects was 1977, California's driest year of record. Many other water suppliers are short of meeting needs as indicated by the presence of active water conservation programs in 39 counties.

The current drought is more severe as one moves south. The hardest hit region is the Central Coast, roughly from San Jose to Santa Barbara. The drought is also severe in the southern end of the San Joaquin Valley, labeled Tulare Lake Basin, but the impact there is cushioned in many areas by ground water supplies.

For Northern California, the historic "critical period" drought of 1929-34 was more severe than the current 1987-90 one. The driest 4-year run in the Sacramento River Basin was 1931-34 which averaged 49 percent of average runoff compared to 56 percent in 1987-90. However, the current drought is almost identical with the worst previous 4-year sequence in 1928-31 in the Southern Sierra, as typified by Kings River runoff. And on the Central Coast, the current dry spell is the most severe 4-year run of record. But it is worth noting that several sequences of below average pre-

precipitation at Santa Barbara are longer than the present one. These earlier sequences include 1869-1874, 1894-1902, and 1945-51.

Prospects for next year depend basically on two factors -- the amount of water carried over in storage and next year's water crop. It may be useful to compare September 1 storage in major reservoirs of the State. A summary of the current year projections and previous years is shown on the table below.

Storage this year on September 1 is about 14.5 million AF, some 60 percent of average, somewhat more than 3 million AF less than last year, about 1.5 million AF less than in 1988, but around 5.7 million AF over that of 1977 at the end of two severe drought years. Statewide storage, in fact, is very similar to that of 1976 after the fourth driest year of the century. But the statewide total picture masks some real problem areas. Central Coast storage is much worse than 1977 and Tulare Lake Basin storage is somewhat worse. Storage at Warm Springs (Lake Sonoma), New Melones, and Spicer Meadows reservoirs account for about 600,000 AF of this year's carryover storage. These reservoirs were completed since 1977.

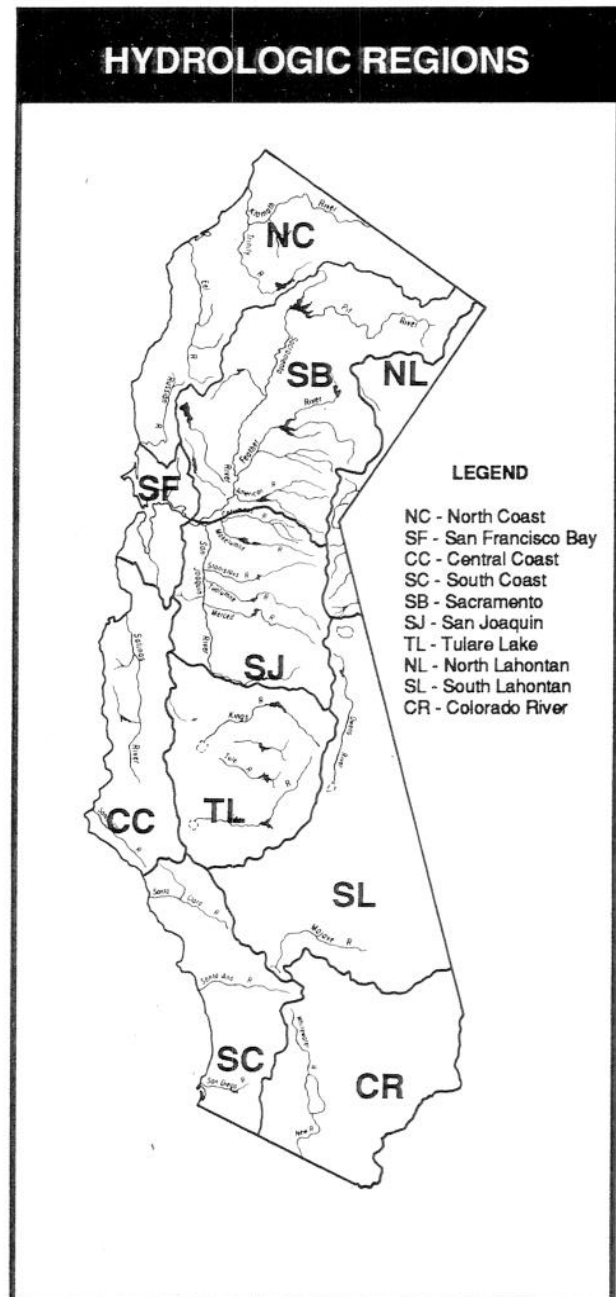
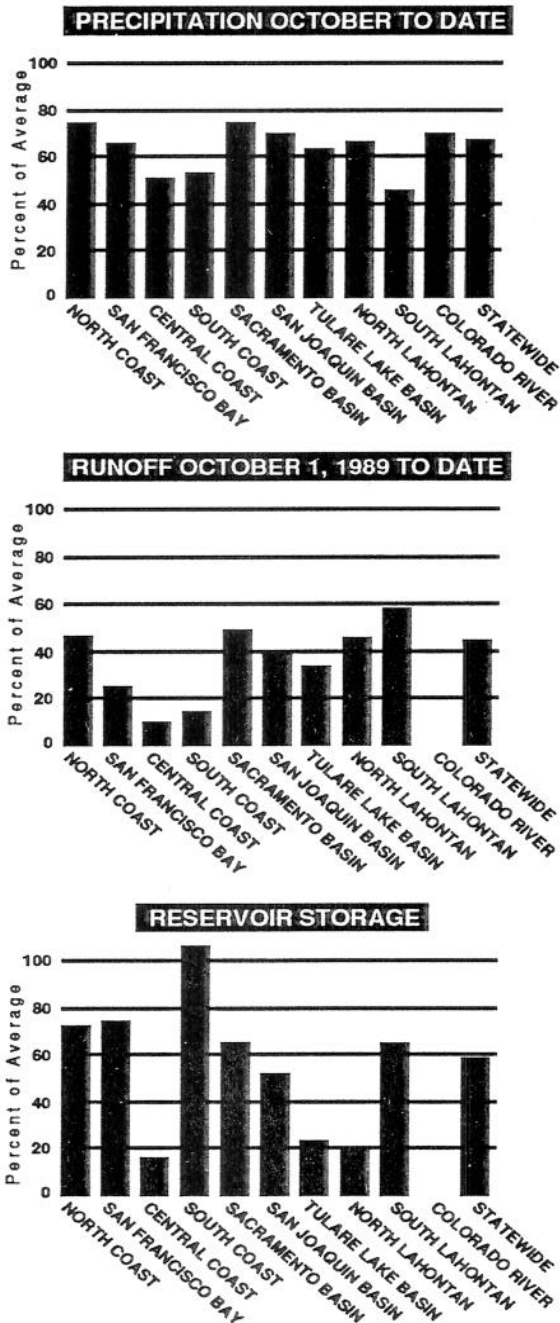
September 30, 1990 State Water Project carryover storage in Oroville and San Luis Reservoirs is approximately 1.3 million AF, with a desirable storage of about 2.4 million AF. Central Valley Project storage for September 30, 1990 is approximately 3.8 million AF with a desirable storage of 7.8 million AF.

Runoff on the Colorado River has been very low the last three years, after some very wet years in the first half of the decade. Storage in Lakes Mead and Powell is about 5 million AF less than last year but still near average for this date.

SUMMARY OF STORAGE IN MAJOR IN-STATE RESERVOIRS ON SEPTEMBER 1 IN 1,000s OF ACRE FEET									
AREA	NO. of RESERVOIRS	TOTAL CAPACITY	AVERAGE	1977	1986	1987	1988	1989	1990
NORTH COASTAL	7	3,149	2,235	388	2,420	2,310	2,011	1,899	1,685
SAN FRANCISCO BAY	18	697	425	290	505	314	342	361	325
CENTRAL COASTAL	6	947	581	263	771	565	370	159	98
SOUTH COASTAL	29	1,979	1,171	865	1,406	1,297	1,298	1,117	1,227
SACRAMENTO	43	16,012	11,044	4,336	12,044	9,191	7,500	9,359	7,026
SAN JOAQUIN	33	11,362	6,926	1,654	8,498	5,097	3,868	3,958	3,621
TULARE LAKE	6	2,067	799	216	1,257	453	263	254	179
NORTH LAHONTAN	5	1,072	636	86	928	515	165	273	126
SOUTH LAHONTAN	8	403	311	165	356	263	219	200	204
<b>TOTALS</b>	<b>155</b>	<b>37688</b>	<b>24128</b>	<b>8263</b>	<b>28185</b>	<b>20005</b>	<b>16036</b>	<b>17580</b>	<b>14491</b>

## Water Supply Conditions

Low rainfall, snowpack, runoff and carryover storage have produced conditions that do not meet water needs of many urban and agricultural areas. Although 1990's drought effects are not as severe as in 1977, California's water supply is significantly below normal in most areas and critical in several others. The graphs show conditions in percent of average. On page 4, "Storage in Major Reservoirs" represents 155 in-state reservoirs. Interstate storage on the Colorado River is shown on page 4. California is receiving full deliveries from the Colorado River in 1990.

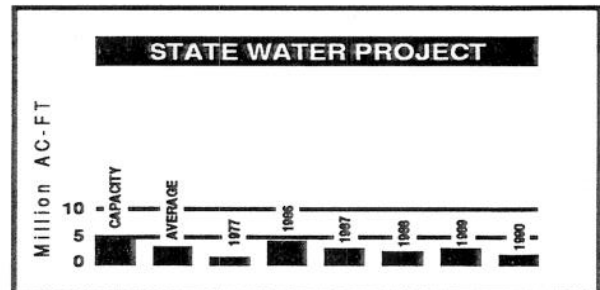
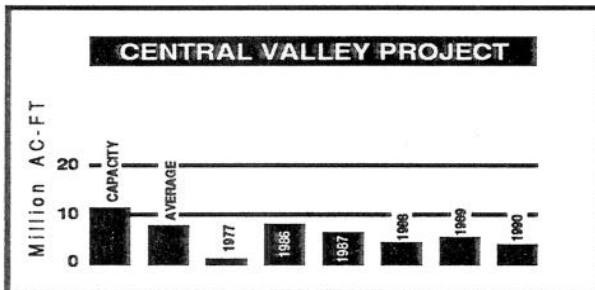
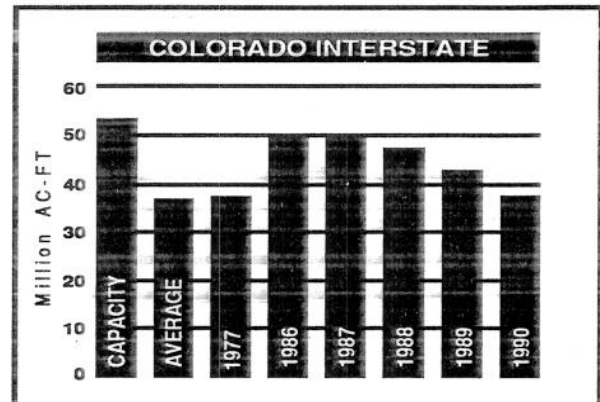
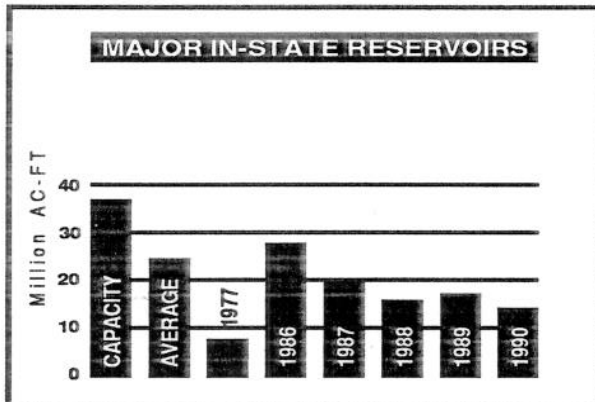


## SUMMARY OF STATEWIDE WATER YEAR DATA

As of September 30  
(Percent of Average)

	1977	1986	1987	1988	1989	1990
PRECIPITATION	45	128	49	46	86	68
WATER YEAR RUNOFF	18	138	48	48	70	43
RESERVOIR STORAGE	35	119	84	66	74	60
SACRAMENTO RIVER INDEX (MAF)*	5.1	26.7	9.2	9.2	14.8	9.2
YEAR TYPE	Critical	Wet	Critical	Critical	Dry	Critical

\*The Sacramento River Index is the sum of unimpaired water year runoff from the Sacramento River at Bend Bridge, Feather River inflow to Oroville, Yuba River at Smartville, and American River inflow to Folsom.



California's water storage facilities proved their worth during the last four years. At the end of summer 1986, storage was well above average—about 119 percent. By the first of October 1989, it was about 74 percent of average. This year, first-of-September storage was about 59 percent of average, down some 3 million acre-feet from last year but over 6.2 million acre-feet more than on September 1, 1977. Interstate storage on the Colorado River is down almost 5.1 million acre-feet from last year and now is the same as the 1977 levels. Although overall storage now is significantly better than in 1977, some reservoirs, particularly those in the Central Coastal and Tulare Lake areas, are below 1977 levels.

## Drought Survey

The following water supply, water demand and water conservation information was obtained from a survey of approximately 150 individual water agencies plus media reports. Initial information was obtained in April 1990 and updated in August 1990. About half of the agencies provide municipal and industrial water, 30 percent furnish agricultural water exclusively and the remaining 20 percent serve both municipal and agricultural needs.

The agencies had demands totaling 12,100,000 acre-feet and supplies of about 9,100,000 acre-feet. Thus, total supplies were about 25 percent short of meeting demands. Municipal agencies were much better off than agricultural districts. Municipal agencies on average had sufficient supplies to meet about 99 percent of their demands, adjusted for conservation goals. Agencies which serve both municipal and agricultural water could supply an average of only about 86 percent of their demands. Districts which serve agricultural water could meet only 67 percent of their demands.

A comparison of this survey and the March/April survey indicates the agencies had an excellent perception of their annual supplies and demands as early as March and April, as the August predictions of the total 1990 supplies and demands differed by only one to two percent from those projected in March and April.

To increase supplies, water agencies and individual farmers deepened and reactivated existing wells, installed many new wells and greatly increased ground water pumping. This increased water costs, water quality problems and sea water intrusion in some coastal areas. Agencies also purchased and pooled water with other districts and farmers and improved their water distribution systems. Many agencies continued, strengthened or established water conservation programs to stretch supplies. In agricultural areas, actions included reducing irrigated acreage, shortening the irrigation season, stressing some crops by reducing applied water, replacing high water-using crops with crops which used less water and using the entire agricultural water allocation to irrigate summer crops leaving nothing for a second crop.

Many of the agencies will continue or strengthen their present actions and/or programs if 1991 is dry.

## Individual Water Agency Summaries

The following is a summary of each agency's individual situation with regard to water demand, water supply, and notes on what the agency is doing to reduce demand or increase supply. The basic data were obtained during March and early April 1990. In August 1990, about 90 percent of the agencies were contacted again to update the data to document the mid-summer situation. During the August update nine additional agencies--seven agricultural and two municipal--were added to the report.

The summaries are listed alphabetically by county and alphabetically by agency name within the county. The type of service supplied by the agency is indicated by listing the population served and the number of irrigated acres.

### Alameda County

#### East Bay Municipal Utility District

Population: 1.2 Million

Irrigated

Acres: 0

Demand: 210,000 AF

Supply: Local Reservoir and Mokelumne Project -- 210,000 AF

✓ The District does not presently anticipate any shortage, however, it is encouraging conservation with a goal of 15 percent demand reduction.

✓ If conditions change, rationing may be used.

✓ District has an ongoing public information and education program.

#### August 1990 Update

✓ Voluntary conservation is exceeding the 15 percent goal.

✓ If 1991 is dry, the District will continue with its present procedure.

### Alpine County

#### Markleeville Water Company

Population: 200-400

Irrigated

Acres: 0

Demand: Winter -- 17 AF

Summer -- 84 AF

Supply: Musser and Jamis Creeks -- 56 - 112 AF

✓ The Company will initiate "odd/even" watering if needed and may drill a well.

✓ The Company's system needs extensive work.

#### August 1990 Update

Not Available

## **Amador County**

### **Jackson Valley Irrigation District**

Population: 300-400

Irrigated

Acres: 3,500

Demand: 13,000 AF

Supply: Jackson Creek Project 5,000 AF  
Mokelumne River 1,000  
6,000 AF

✓ Irrigated acreage will be reduced to match supply.

#### **August 1990 Update**

✓ If 1991 is drier, irrigated area will be reduced further.

## **Butte County**

### **Del Oro Water Company**

Population: 9,500

Irrigated

Acres: 0

Demand: 1,197 AF

Supply: Wells -- 1,197 AF

✓ The Company passed out conservation kits and restricted irrigation between 11:00 a.m. and 6:00 p.m. beginning April 1, 1990.

✓ The Company supports conservation programs in schools.

#### **August 1990 Update**

✓ The company may get PG&E water from Paradise Irrigation District or Del Oro-Magalia intertie.

✓ Despite Company efforts, consumption has not decreased.

✓ If 1991 is dry, there will be rationing!

### **Lime Saddle Community Service District**

Population: 600

Irrigated

Acres: 0

Demand: 130 AF

Supply: Ground Water -- 50 AF  
Sterling Bluff Water Company -- 70 AF

✓ Demand reduced through conservation education and "high water rates".

✓ Mandatory rationing will be implemented if needed.

#### **August 1990 Update**

✓ The District is still having TCB problems in ground water.

✓ The District purchased 100 AF from Sterling Bluffs Water Company.

✓ If 1991 is dry, the District will purchase additional water from Sterling Bluffs.

### Magalia Community Water District

Population: 650

Irrigated

Acres: 0

Demand: 95 AF

Supply: Ground Water -- 60 AF/Year

✓ The District can increase supply by purchase from Paradise Irrigation District.

#### August 1990 Update

✓ The District is meeting conservation goals -- no changes are anticipated.

✓ If 1991 is dry, the District would continue the present program.

## Calaveras County

### Angels Camp, City of

Population: 2,580

Irrigated

Acres: 0

Demand: 900 AF

Supply: PG&E Angels Forebay -- 13,000 AF

✓ PG&E has advised the City that it will not have a shortage this year.

✓ The City utilizes bill mailing stuffers urging water conservation.

#### August 1990 Update

Not Available

### Calaveras County Water District

Population: 15,000

Irrigated

Acres: 1,000

Demand: 8,600 AF

Supply: Bear Creek -- 70 AF

Stanislaus River -- 5,000 AF

New Hogan Reservoir -- 3,500 AF

✓ The District urges conservation in all water uses.

✓ The District doesn't expect problems this year.

✓ Due to construction, the District had to drain Bear Creek Reservoir and lost 30 AF.

#### August 1990 Update

Not Available

## Contra Costa County

### Brentwood, City of

Population: 8,000

Irrigated

Acres: 0

Demand: 2,000 AF

Supply: Ground Water -- 2,000 AF

✓ The District has had quality problems with local ground water. New wells drilled in 1988 and 1990 improved quality.

- ✓ Until the current drought, East Bay Municipal Utilities District provided the City's entire supply, subsequent to the drought the City turned to local ground water.

#### **August 1990 Update**

- ✓ The City demand is now at 100 gallons per capita day -- about 1,000 AF/year.
- ✓ If 1991 is dry, the City will continue the current conservation effort.

#### **Contra Costa Water District**

Population: 350,000

Irrigated

Acres: 0

Demand: 125,000 AF

Supply: San Joaquin River -- (Variable)  
CVP -- 125,000 AF

- ✓ The San Joaquin River supply depends on water quality. San Joaquin River water will not be available this year due to salinity intrusion.
- ✓ The District supports public information and education on water conservation.

#### **August 1990 Update**

- ✓ Voluntary conservation has achieved a 16 percent reduction in use.
- ✓ If 1991 is dry, the District can implement mandatory rationing.

### **Del Norte County**

#### **Hussey Ranch Corp. Community Service District**

Population: 44

Irrigated

Acres: 0

Demand: 4 AF

Supply: Local Stream -- 4 AF

- ✓ The District may reduce demand with mandatory rationing. To increase supply the District may move diversion upstream and put in a new well or go to the Smith River for supply.
- ✓ Chronic problems exacerbated by drought.

#### **August 1990 Update**

- ✓ User intends to shift supply source to Smith River.
- ✓ May rains enhanced flow in supply stream -- Peacock Creek.
- ✓ If 1991 is dry, the District would start more severe mandatory rationing earlier.

### **El Dorado County**

#### **El Dorado Irrigation District**

Population: 58,000

Irrigated

Acres: 5,532

Demand: 30,366 AF

Supply:	American River @ Strawberry	55 AF
	Cosumnes River @ Outingdale	41
	Sly Park Reservoir (USBR)	16,639
	PG&E Forebay Reservoirs	11,309
	Wells (Swansboro)	51
	Folsom Lake (USBR)	<u>3,750</u>
		31,845 AF

- ✓ If needed, demand will be reduced by conservation and rationing in a five-stage program. Each stage includes all previous stage restrictions, plus more. Stage 5 bans all outside water use, all new connections and any expansion of agriculture.
- ✓ The District is working on three interim supply projects: Sly Park Reservoir surcharge and the renovation of two ditches.
- ✓ The District credits its public information program and its voluntary/mandatory conservation program with the current success of fitting demand to supply. Over three years, 30,219 acre feet of water have been saved, which is nearly equivalent to this year's entire supply.
- ✓ The CVP supply from Folsom Lake was reduced 50 percent, leaving 3750 AF, which is more than used last year.

#### August 1990 Update

- ✓ Current conservation goals are being met.
- ✓ "Crawford Ditch" improvement has "saved" 2,500 AF.
- ✓ The District is pursuing wastewater reclamation to produce one to two MGD to irrigate a golf course.

## **Fresno County**

### Consolidated Irrigation District

Population: 0

Irrigated

Acres: 150,000

Demand: 280,000 AF

Supply: Kings River -- 130,000 AF

- ✓ Private wells will make up difference between supply and demand.
- ✓ The District participates in Water Awareness Week.

#### August 1990 Update

- ✓ If 1991 is critically dry the District will repeat its current action -- practicing conservation to stretch its supplies.

### Fresno, City of

Population: 360,800

Irrigated

Acres: 0

Demand: 125,621 AF

Supply: 210 Wells -- 125,621 AF

- ✓ 34 wells out of service due to water quality problems: DBCP-TCE-Salt-Chloride.
- ✓ 10,000 AF of reclaimed water from city sewage treatment plant is supplied to Fresno Irrigation District in exchange for an equal quantity of Kings River water delivered to the city recharge basin.
- ✓ Voluntary water conservation is urged by the city.
- ✓ The City drilling six new wells.
- ✓ The City cooperates with schools in fostering water conservation.

- ✓ Permanent Use Restrictions are in effect: Days and hours of use, no runoff, no wetting pavement.

#### August 1990 Update

- ✓ Conservation goals are being met.
- ✓ If 1991 is critical the City will increase its conservation effort, have stricter rationing and develop more wells.
- ✓ Significant increase in population and industrial water use have caused water demand to increase roughly 10 percent from 1989's, 114,200 AF.

#### Fresno Irrigation District

Population: 45,000

Irrigated

Acres: 195,000

Demand: 340,000 AF

Supply:	Kings River/Pine Flat Res. --	277,200 AF
	Friant/Kern Canal --	30,800 AF

- ✓ The District supplies 10,000 AF Kings River water to the City of Fresno and receives equal quantity of reclaimed water.
- ✓ The District reduced demand by shortening the delivery season from six months to four months. Customers use ground water as a replacement.
- ✓ Water delivery was discontinued April 15, 1990 and began again during the summer.

#### August 1990 Update

- ✓ Use of ground water will increase.
- ✓ If 1991 is critical, conservation will be intensified and more ground water will be used.
- ✓ Water supply estimates were revised, changing to 306,000 AF supplied by Kings River/Pine Flat Reservoir and 28,800 AF by Friant/Kern Canal.

#### James Irrigation District

Population: 0

Irrigated

Acres: 23,500

Demand: 80,000 AF

Supply:	Ground Water --	50,000 AF
	San Joaquin River --	7,600 AF
	CVP/DMC --	17,750 AF

- ✓ Any shortage in supply will be made-up with ground water.
- ✓ San Joaquin riparian replacement water, 7,600 AF, reflects a 22 percent deficiency from the contract amount of 9,700 AF.
- ✓ CVP reflects 50 percent deficiency, from the contract amount 35,300 AF.

#### August 1990 Update

Not Available

#### Laguna Irrigation District

Population: 0

Irrigated

Acres: 34,474

Demand: 138,000 AF

Supply:	Ground Water --	3,000 AF
	Kings River (Unknown At This Time)	

- ✓ Normal supply is 50,000 AF from the Kings River. (Last year was 34,000 AF.) If less than 35,000 AF water will remain in storage. Conveyance losses too great to waste.

- ✓ Deficiency of supply will be made-up with ground water from private wells.

#### August 1990 Update

Not Available

#### San Luis Water District\*

Population: 0

Irrigated

Acres: 58,000

Demand:	Pre-Irrigation	15,000 AF
	Season Irrigation	<u>90,000</u>
		105,000 AF

Supply:	Ground Water	4,000 AF
	CVP Allocation	63,000
	One-Time Carryover	16,000
	Transfer 1989 Carryover	7,000
	1989 Carryover	
	(Pre-Irrigation)	<u>15,000</u>
		105,000 AF

- ✓ The CVP allocation reflects 50 percent deficiency from the contracted amount of 125,000 AF.
- ✓ In 1990, 8,000 to 10,000 acres will be fallow.
- ✓ All available water has been used with no carryover for 1991 pre-irrigation.
- ✓ If 1991 is dry the District will reduce demand by fallowing more area.

#### Westlands Water District

Population: N/A

Irrigated

Acres: 536,000

Demand: 975,000 AF

Supply:	Ground Water --	400,000 AF
	CVP --	575,000 AF

- ✓ CVP supply reflects a 50 percent deficiency from the contract 1.15 MAF.
- ✓ Allocation of CVP water to individual District members was also cut 50 percent.
- ✓ Demand will be reduced by fallowing some fields.
- ✓ Supply will be increased with ground water from private wells.
- ✓ The District has an information program and is participating in Water Awareness Week programs.
- ✓ The District has a very active crop water management program for irrigators.

#### August 1990 Update

- ✓ The ground water supply has salinity and boron problems.
- ✓ 105,000 acres have been fallowed.
- ✓ The estimated loss due to the drought is \$145,000,000 in farm income.
- ✓ If 1991 is dry, more land will be taken out of production.

\* New listing: August 1990 data only.

## Glenn County

### Glide Water District\*

Population: 300

Irrigated

Acres: 7,750

Demand: 13,000 AF

Supply: Ground Water -- As Needed  
CVP -- 6,600 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ Each customer receives half a prorate share based on the CVP deficiency.
- ✓ Approximately 25 - 30 percent of the irrigated is fallow.
- ✓ Drought losses could be as much as \$1 million based on a 50 percent reduction in irrigation supply.
- ✓ Glide has a systemwide runoff recapture facility.
- ✓ If 1991 is dry, the District would do the same as this year.

### Kanawa Water District\*

Population: 0

Irrigated

Acres: 15,000

Demand: 45,000 AF/Year

Supply: Ground Water -- As Needed  
CVP-- 22,500 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ The District requires all tail water to be reused.
- ✓ Each user received a half share.
- ✓ Area irrigated was reduced 25-30 percent.
- ✓ An estimated loss of \$2.5 million based on reduced acreage, could be offset to some extent by ground water pumping by individual growers.
- ✓ If 1991 is drier, the District would do the same basic procedure with reduced shares.

## Kern County

### Arden Water Company

Population: 1,050

Irrigated

Acres: 0

Demand: 300± AF

Supply: Ground Water -- 300± AF

- ✓ The Company supports conservation.
- ✓ Supply has been firmed-up by drilling new wells, deepening existing wells and adding storage.
- ✓ No supply problems are expected.

### August 1990 Update

Not Available

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\* New listing. August 1990 data only.

**Belridge Water Storage District**

Population: 0

Irrigated

Acres: 52,000

Demand: 150,000 AF

Supply: SWP -- 81,500 AF

- ✓ SWP supply reflects 50 percent deficiency.
- ✓ Demand can be reduced by fallowing some fields or stressing crops such as cotton near time of harvest.
- ✓ Individual customers could possibly buy water from other Kern County farmers.

**August 1990 Update**

Not Available

**Berrenda Mesa Water District**

Population: 0

Irrigated

Acres: 37,150

Demand: 118,000 AF

Supply:	SWP @ 50% Deficiency	77,595 AF
	SWP 1989 Carryover	8,139
	SWP 1989 Carryover Exchange	1,020
	SWP KCWA Dry Year Pool	21,747
	Purchase of Banked Grd. Water	<u>9,500</u>
		118,001 AF

- ✓ SWP supply reflects a 50 percent deficiency.
- ✓ All reasonable conservation measures are in place. No significant reduction of demand is possible because the District is in permanent crops.
- ✓ The District is working with other Kern County farmers attempting to arrange transfers of banked water for future deliveries.

**August 1990 Update**

- ✓ Updated supply estimates show demands balanced with additional SWP water and purchases of banked ground water.
- ✓ Increased costs for purchased water in 1990 will be \$1.3 million.
- ✓ If 1991 is dry, either increased water purchases or damage to permanent crops will occur.

**Buena Vista Water Storage District\***

Population: 0

Irrigated

Acres: 50,000

Demand: 140,000-150,000 AF

Supply:	SWP Entitlement	12,500 AF
	SWP Exchange	35,000 AF
	Kern River	20,000 AF

- ✓ SWP supply reflects a 50 percent deficiency.
- ✓ Ground water pumped by growers will make up difference.
- ✓ Conservation is accomplished by closer control by ditch tenders to prevent spill. Success is shown in reduced drainage flow.
- ✓ If 1991 is drier, the District would pump more ground water and/or reduce irrigated area.

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\* New listing. August 1990 data only.

### Lost Hills Water District

Population: 0

Irrigated

Acres: 50,000

Demand: 110,000 AF

Supply:	SWP	70,200 AF
	KCWA Ag. Pool	32,000 AF
	1989 Carryover	8,000 AF

- ✓ SWP supply reflects 50 percent deficiency.
- ✓ The District can lower demand by fallowing land.
- ✓ Exchanges with other SWP-Kern County Water Agency cooperators to recover water banked in ground water.

### August 1990 Update

- ✓ Demand was reduced from 140,000 AF by fallowing fields.
- ✓ Increased costs for water purchases of 32,000 AF, from KCWA Ag. Pool, are estimated to be \$1.93 million.
- ✓ If 1991 is drier, the District will fallow additional fields.

### North Kern Water Storage District

Population: 0

Irrigated

Acres: 65,000

Demand: 185,000 AF

Supply:	District. Ground Water	95,000 AF
	Private Grd. Water	60,000 AF
	Kern River	30,000 AF

- ✓ Shortage will be made-up with ground water from both individual and District pumps.
- ✓ Demand can be reduced by decreasing irrigated acreage.

### August 1990 Update

- ✓ Demand has been reduced from the 240,700 AF original estimate, due to idled land.
- ✓ Increased District pumping costs for power and well maintenance, are estimated to be \$3.5 million.
- ✓ The District is trying to purchase 20,000 AF of Kern River water to hold in Isabella Reservoir, in case 1991 is dry.

### Tehachapi-Cummings Community Water District

Population: 17,000

Irrigated

Acres: 2,420

Demand: 9,000 AF

Supply:	Ground Water --	5,700 AF
	SWP --	3,300 AF

- ✓ This District has flexibility in supply and pools with other users.
- ✓ No problem is foreseen this year.

### August 1990 Update

Not Available

### Wheeler Ridge-Maricopa Water Storage District

Population: 0

Irrigated

Acres: 86,606

Demand: 190,000 AF

Supply: Ground Water -- 29,000 AF  
SWP -- 151,500 AF  
1989 Carryover -- 9,550 AF

- ✓ SWP supply reflects a fifty percent deficiency.
- ✓ The District will reduce demand by fallowing fields.
- ✓ The District will increase supply, 40,000 AF -- 1989 SWP carryover and KCWA Ground Water Storage Program.

### August 1990 Update

- ✓ Demand was reduced from 245,820 AF by fallowing and elimination of double-cropping.
- ✓ There was some walnut damage from increased chlorides in drought year supplies.
- ✓ If 1991 is dry, there will be additional fallowing and less double-cropping.

## **Kings County**

### Corcoran, City of

Population: 16,000

Irrigated

Acres: 0

Demand: 4,200 AF

Supply: Ground Water -- 4,200 AF

- ✓ The city does not see any problems this year.

### August 1990 Update

Not Available

### Devil's Den Water District

Population: 0

Irrigated

Acres: 6,000

Demand: 20,000 AF

Supply: Ground Water -- 3,000 AF  
SWP -- 6,350 AF

- ✓ SWP: Supply reflects a fifty percent deficiency equals 6,350 AF.
- ✓ The District will reduce demand by decreasing acreage in production.
- ✓ The District will increase supply some -- but well capacity is limited.

### August 1990 Update

- ✓ An estimated 800 acres out of 3,000 planted acres will be lost.
- ✓ If 1991 is critical, the District will reduce the area irrigated to match the supply available.

### Dudley Ridge Water District

Population: 0

Irrigated

Acres: 30,000

Demand: 57,700 AF

Supply: 28,850 AF

- ✓ SWP Supply reflects a fifty percent deficiency.

- ✓ The District will reduce demand by decreasing cultivated acreage.
- ✓ The District supports Kings County Water Safety Committee which provides drought information.

#### August 1990 Update

- ✓ The District is meeting its conservation goals. Irrigated area was reduced to match supply. An estimated 10,000 acres mostly cotton and lettuce was fallow. No dollar loss is estimated.
- ✓ If 1991 is critical, more land will be taken out of production.

#### Lakeside Irrigation Water District

Population: 0

Irrigated

Acres: 27,000 Acres

Demand: 80,000 AF

Supply: Ground Water -- 60,000 AF  
Friant-Kern Class II -- 0 AF

- ✓ The District will reduce demand by reducing the area irrigated.
- ✓ The District normally receives Class II Friant-Kern water via exchanges with other Districts.

#### August 1990 Update

- ✓ Crop patterns have been changed to limit high water using crops. Significant loss will occur in silage corn due to reduced water supply.
- ✓ Heavy ground water pumping is causing water tables to drop and the pumping rate is reduced due to increased lift.
- ✓ If 1991 is dry, additional land will have to be fallowed and additional wells will be drilled.

#### Tulare Lake Basin Water Storage District

Population: 0

Irrigated

Acres: 170,000

Demand: 391,000 AF

Supply: Ground Water -- 150,000 AF  
Kings River -- 0 AF  
SWP -- 59,250 AF  
Yuba County via SWP -- 6,200 AF

- ✓ The District practices conservation and is currently at 98 percent efficiency.
- ✓ Ground water is at maximum yield.
- ✓ SWP Supply reflects a 50 percent deficiency.

#### August 1990 Update

Not Available

#### Lower Lake County Water District

Population: 2,600

Irrigated

Acres: 0

Demand: 320 AF

Supply: Ground Water -- 255 AF

- ✓ Iron and manganese exceed standards in some wells.
- ✓ If water supply is insufficient, voluntary conservation will become mandatory. Also, water may be trucked, as in the past

#### August 1990 Update

- ✓ The District is meeting its conservation goal of 20 percent demand reduction.

- ✓ If 1991 is dry, the District will try to connect with Highland Water District.
- ✓ District is planning to install iron and manganese treatment facilities to double the potable ground water yield.

## Los Angeles County

### Avalon, City of - Catalina Island

Population: 2,500 Local  
1,000,000 Visitors Per Year

Irrigated

Acres: 0

Demand: 460 AF

Supply: Ground Water -- 88 AF  
Middle Ranch Reservoir -- 372 AF

- ✓ Since October 1989 first stage mandatory conservation has been in-place: no car and sidewalk washing, limited lawn watering, etc.
- ✓ Southern California Edison Company serves the City.
- ✓ Middle Ranch Reservoir has a capacity of 1,143 AF; as of May 7, 1990 the storage is at 463 AF; the lowest since 1973.
- ✓ A 45 AF/year reverse osmosis desalter is under construction; operation is scheduled for December 1990.
- ✓ Two new wells scheduled for operation by December 1990 will produce 40 AF/year.
- ✓ Reactivating an old well in October 1990 will produce 16 AF/year.
- ✓ Second stage conservation is expected in October 1990 with a target of 25 percent reduction.

### August 1990 Update

- ✓ Ground water use increased to 166 AF/year.
  - ✓ Conservation is reducing demand by ten percent.
  - ✓ Some way to speed up the water well permit procedure is needed -- at least during drought.
- If 1991 is dry, the City will initiate 50 percent rationing, bring on a small desalter and two new wells.

## Madera County

### Chowchilla Water District

Population: 0

Irrigated

Acres: 80,000

Demand: 180,000 AF

Supply: Ground Water -- 150,000 AF  
Chowchilla River -- 3,000 AF  
CVP Friant-Madera Class I -- 38,121 AF  
CVP Friant-Madera Class II -- 0 AF

- ✓ CVP supply reflects a 28 percent deficiency.
- ✓ Individual growers provide ground water as needed.
- ✓ Normal year the District received 24,000 AF from Buchanan Reservoir - Chowchilla River.
- ✓ Growers can use the District system to exchange water.

#### August 1990 Update

- ✓ Previous estimates indicated no ground water supply.
- ✓ If 1991 is dry, irrigated area will be reduced or additional ground water would be used or both.

#### Gravelly Ford Irrigation District

Population: 0

Irrigated

Acres: 8,400

Demand: 15,000 AF

Supply: Ground Water -- 15,000 AF

Friant-Kern Canal Class II -- 0 AF

- ✓ Demand will be reduced by leaving annual croplands fallow to provide sufficient water for permanent crops.
- ✓ Completion of the Cross Valley Canal and release of additional recharge water would be helpful.

#### August 1990 Update

Not available.

#### Madera Irrigation District

Population: 0

Irrigated

Acres: 95,000

Demand: 285,000 AF

Supply: Ground Water -- 197,000 AF

Fresno River (Water Rights) -- 10,000 AF

"Soquel" Water (Water Rights) -- 6,000 AF

CVP-Friant Class I (72 Percent) -- 61,200 AF

CVP-Friant Class II -- 0 AF

- ✓ Growers will use ground water to fill-out their needs.
- ✓ The District may buy 10,000 AF.
- ✓ The District will deliver surface water in June and July -- growers will use ground water in the spring when ground water levels are higher.

#### August 1990 Update

- ✓ Growers have had to purchase additional water because wells are going dry.
- ✓ The District Purchased 2,600 AF @ \$90/AF.
- ✓ The water table has dropped an average of 25 feet in some places.
- ✓ If 1991 is dry, the District will have to reduce irrigated area and ration water.

### **Marin County**

#### Bolinas Community Public Utility District

Population: 1,800

Irrigated

Acres: 0

Demand: 180 AF

Supply: Arroyo Hondo Woodrat Nos. 1 and 2 180 AF

- ✓ Local operators judge that supply will be adequate for the year.
- ✓ Arroyo Hondo is a free-flowing stream.

#### August 1990 Update

- ✓ Conservation goals are being met.
- ✓ If 1991 is dry, action will depend on conditions. Use can be held down to meet supply. But, if supply "goes dry" new procedures will be needed.

#### Marin Municipal Water District

Population: 168,000

Irrigated

Acres: 0

Demand: 29,000 AF

Supply: Seven Local Reservoirs -- 49,900 AF Available  
Intertie with Sonoma County -- 4,300 AF

- ✓ In 1988-89 voluntary conservation reduced demand 12 percent. The District will now concentrate on extensive media advertising to achieve an additional ten percent.
- ✓ If needed, it may be able to increase take a few hundred acre-feet from Sonoma County.

#### August 1990 Update

- ✓ With a Voluntary conservation target of 25 percent, demand has fallen receiving 23 percent.
- ✓ If 1991 is dry, the District would institute conservation, voluntary first followed by mandatory (if needed).

### **Mariposa County**

#### Mariposa Public Utility District

Population: 1,500

Irrigated

Acres: 0

Demand: 350 AF

Supply: Ground Water -- 100 AF  
Stockton Creek -- 235 AF

- ✓ The District has fixed leaks, installed flow restrictors, and publicized use restrictions.
- ✓ Additional wells are being acquired to enable additional ground water use.

#### August 1990 Update

- ✓ In June, 70 percent of supply is from ground water, thus saving reservoir water.
- ✓ One well is down due to quality.
- ✓ The District is meeting all conservation goals.
- ✓ If 1991 is dry, the District could reduce delivery 50 percent and may have to truck water.

### **Mendocino County**

#### Fort Bragg, City of

Population: 6,000

Irrigated

Acres: 0

Demand: 250 AF

Supply: Noyo River, and Newman and Simpson Springs -- 250 AF

- ✓ The City has an ordinance requiring ordinary conservation -- no car washing. ✓ It is too early for the City to judge if supply will be adequate for the entire year.
- ✓ The possibility of using ground water is under study.

- ✓ The City supports education on conservation.

**August 1990 Update**

Not Available

**Laytonville County Water District**

Population: 1,000

Irrigated

Acres: 0

Demand: 3,825 AF

Supply: Ground Water -- 3,825 AF

- ✓ The District has no problems at this time.

- ✓ The District supports voluntary conservation and includes conservation notes with bill mailings.

**Redwood Valley County Water District**

Population: 4,500

Irrigated

Acres: 3,300

Demand: 2,000 AF

Supply: Lake Mendocino -- 2,000 AF

- ✓ Demand and supply are based on historic use.

- ✓ There is a Court ordered moratorium on new service connections until additional supply is available so the district is looking for additional supply.

**Merced County**

**Central California Irrigation District**

Population: 4,000

Irrigated

Acres: 143,000

Demand: 532,000 AF

Supply: Ground Water -- 40,000 AF  
CVP Exchange -- 490,000 AF

- ✓ The District use wells at end of the main canal to regulate supply to avoid spills.

- ✓ CVP supply reflects a deficiency.

- ✓ Ground water quality under much of the District is poor which will limit its use as an alternate supply.

- ✓ The District sends letters to growers and issues press releases to inform growers of drought conditions.

**August 1990 Update**

- ✓ As part of rationing plans, the District enacted tiered pricing, however, its impact is uncertain.

**Livingston, City of**

Population: 7,800

Irrigated

Acres: 0

Demand: 460 AF Supply: Ground Water -- 460 AF

- ✓ The City has year-round water-use restrictions to prevent wasteful use.

- ✓ Two wells contain DBCP.

#### August 1990 Update

- ✓ The City is meeting conservation goals.
- ✓ If 1991 is dry, the City will deepen wells.

#### Los Baños, City of

Population: 15,000

Irrigated

Acres: 0

Demand: 350 AF

Supply: Ground Water -- 464 AF

- ✓ The City has some quality problems (PCE).
- ✓ The City supports ongoing water education program in schools.

#### August 1990 Update

- ✓ The City's conservation plan, tiered pricing and education, is working.
- ✓ If 1991 is dry, the City will add wells.

#### Merced, City of

Population: 53,000

Irrigated

Acres: 0

Demand: 16,513 AF

Supply: Ground Water -- 16,513 AF

- ✓ PCB is in the intermediate aquifer and the City could use help to clean it up.
- ✓ The City has a voluntary conservation program.
- ✓ The City has been using mailings, media advertisements, and street inspections for four years.
- ✓ A reduction in peak demand has been noticed.

#### August 1990 Update

- ✓ PCE contamination has closed three wells.
- ✓ Voluntary conservation is working well.
- ✓ If 1991 is dry, the District will develop additional wells.

#### Merced Irrigation District

Population: 0

Irrigated

Acres: 101,000

Demand: 400,000 AF

Supply: Ground Water: District Pumps -- 50,000-80,000 AF  
Grower Pumps -- As Needed  
Merced River (Lake McClure) -- 200,000 AF

- ✓ The District imposed a 1990 surface water allotment of 2.0 AF/acre and up to 0.5 AF/acre additional if and when available.
- ✓ Ground water is available from 210 District wells.
- ✓ The District has tightened water control by better communication between growers and ditch tenders.

#### August 1990 Update

- ✓ The allotted 2.0 AF/acre is working to reduce demand.
- ✓ If 1991 is dry, the District will develop deeper wells.

### **Planada Community Services District**

Population: 3,500

Irrigated

Acres: 0

Demand: Not Available

Supply: Ground Water -- As Needed

- ✓ The District has a water quality problem: "Sulfur water" below 400 feet.
- ✓ The District requires odd/even watering days.
- ✓ High use of farm wells in the surrounding area can drawdown water level below pumps.

#### **August 1990 Update**

- ✓ The District has met 50 percent of its conservation goal.
- ✓ If 1991 is dry, additional wells will be drilled.

### **Winton Water Storage District**

Population: 6,800

Irrigated

Acres: 0

Demand: 1,726 AF

Supply: Ground Water -- 1,726 AF

- ✓ The District is experiencing some water quality problems (DBCP).

#### **August 1990 Update**

- ✓ A five percent increase in demand is due to agricultural needs. However, urban use has decreased due to conservation.
- ✓ If 1991 is dry, additional wells will be drilled.

## **Mono County**

### **June Lake Public Utility District**

Population: 650

Irrigated

Acres: 0

Demand: 160 AF

Supply: Snow Creek and June Lake -- 160 AF

- ✓ No problem is anticipated this year.

#### **August 1990 Update**

Not Available

### **Mammoth County Water District**

Population: 5,000 Permanent  
30,000 Visitors

Irrigated

Acres: 0

Demand: 2,750 AF

Supply: Ground Water -- 1,480 AF  
Mammoth Creek -- 1,270 AF

- ✓ Out-door water use is restricted.
- ✓ A serious problem is not anticipated.
- ✓ Ground water use can be increased.
- ✓ One additional well is to be operating in August 1990.

**August 1990 Update**

Not Available

**Monterey County**

**California Water Service Company - Salinas**

Population: 70,000

Irrigated

Acres: 0

Demand: 12,000 AF/Year

Supply: Ground Water -- 12,000 AF

✓ The Company will implement a combination of Stages 1 and 2, as suggested in the Department of Water Resources' Model Drought Management Plan, if water conditions continue to degrade.

✓ The Company participated in school and community awareness programs.

✓ Sea water intrusion is increasing. Also, iron and manganese were found in two new wells.

**August 1990 Update**

Not Available

**Monterey County Flood Control & Water Conservation District.**

Population: 175,000

Irrigated

Acres: 210,000

Demand: 550,000 AF

Supply: Ground Water -- 550,000 AF

✓ The District does not supply water; overlying land owners pump from ground water.

✓ Water quality problems include increasing salinity intrusion, nitrates, and high TDS.

✓ The District operates Nacimiento and San Antonio Reservoir to regulate runoff to recharge Salinas Valley ground water. The current drought has severely limited recharge amounts.

✓ The District is initiating a Mobile Irrigation Laboratory.

✓ The District coordinated a water awareness committee and conducted AIMS workshops.

**August 1990 Update**

✓ The District estimates "normal overdraft" of Salinas Basin at 50,000 AF/year. Overdraft for 1990 is estimated at 300,000 AF.

✓ If 1991 is dry, the District will work to implement a rationing plan, currently under development.

**Monterey Peninsula Water Management District**

Population: 105,000

Irrigated

Acres: 300

Demand: 16,500 AF

Supply: Ground Water 13,600 AF

Carmel River 2,900

15,500 AF

✓ Iron and manganese effect water quality on the lower Carmel River.

✓ The mandatory conservation target is 20 percent below 1987-88 use.

✓ The District is sponsoring drought survival conferences.

✓ The District use press and radio advertisements promoting conservation with specific hints.

✓ The District is working toward golf course irrigation with reclaimed water.

#### August 1990 Update

- ✓ The District is exceeding conservation goals reducing demand 30 percent.
- ✓ If 1991 is dry, the District will continue with mandatory 20 percent conservation.

### **Napa County**

#### Napa, City of

Population: 60,000

Irrigated

Acres: 0

Demand: 15,300 AF

Supply: Lake Hennessey 2,300 AF

Lake Milliken 1,000

SWP, North Bay Aqueduct 4,000

7,300 AF

Purchase from Yuba County,

Bullards Bar 6,500

13,800 AF

- ✓ The City expects to reduce demand 10 to 15 percent with voluntary conservation.
- ✓ The City will purchase 6,500 AF from Yuba County (Bullards Bar Reservoir) via the SWP-North Bay Aqueduct.
- ✓ The City promotes conservation with visits to large water users and schools, and distribution of various conservation services.

#### August 1990 Update

- ✓ During the first six months of 1990 demand was 10.3 percent less than 1987 unadjusted for growth.
- ✓ The SWP is delivering Yuba County water via the North Bay Aqueduct.
- ✓ If 1991 is dry, the City will purchase from Yuba County and institute rationing.

### **Nevada County**

#### Donner Lake Utility District

Population: 25,000

Irrigated

Acres: 0

Demand: 530 AF

Supply: Spring -- 200 AF

Ground Water -- 120 AF

Donner Lake -- 175 AF

- ✓ The District has no foreseeable problem.
- ✓ Green Point Spring has dropped from 110 gpm to 90 gpm but that water supply will be adequate.

#### August 1990 Update

Not Available

### **Nevada Irrigation District**

Population: 41,000

Irrigated

Acres: 97,000

Demand: 140,000 AF

Supply: 250,000 AF

✓ Supply is the total storage Bowman Reservoir, Jackson Meadows Reservoir, Rollins Reservoir, Scotts Flat Reservoir and Combie Reservoir.

✓ The District urges conservation through radio and newspaper advertisements.

### **August 1990 Update**

Not Available

## **Placer County**

### **Placer County Water Agency**

Population: 70,000

Irrigated

Acres: 10,800

Demand: 100,000 AF

Supply: Wells -- >100 AF  
CVP-Folsom Reservoir -- 11,500 AF  
PG&E System -- 100,000 AF

✓ The Agency has no shortage.

### **August 1990 Update**

Not Available

## **Sacramento County**

### **Sacramento, City of**

Population: 340,000

Irrigated

Acres: 0

Demand: 116,500 AF

Supply: Ground Water -- 24,000 AF  
American River -- 46,500 AF  
Sacramento River -- 46,000 AF

✓ The City doesn't expect a problem.

✓ The City Council approved mandatory water-saving measures to achieve water savings of 20 percent.

### **August 1990 Update**

✓ The June/July average saving from conservation is 20 percent.

### **Sacramento County Water Agency**

Population: 20,000

Irrigated

Acres: 400

Demand: 9,500 AF

Supply: Ground Water -- 8,500 AF  
Folsom Lake -- 1,000 AF

- ✓ The Agency found some iron and magnesium problems.
- ✓ The Agency participates with schools, radio and other local agencies' conservation programs.
- ✓ The Agency can increase ground water use if needed.
- ✓ The County passed a voluntary water conservation package. It only affects the area served by the County Water Maintenance District.

**August 1990 Update**

Not Available

**San Juan Suburban Water District**

Population: 190,000

Irrigated

Acres: 40

Demand: 55,000 AF

Supply: American River -- 33,000 AF  
Water Rights -- 25,000 AF  
CVP-- 5,600 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ The District is supporting conservation measures. A Conservation Patrol is in operation.

**August 1990 Update**

Not Available

**San Benito County**

**Hollister, City of\***

Population: 21,000

Irrigated

Acres: 0

Demand: 4,000 AF

Supply: Ground Water -- As Needed

- ✓ The City is supplied by two organizations (1) City Water Department and (2) Sunnyslope Water District.
- ✓ The City operates six wells.
- ✓ Ground Water levels have remained the same over the last six months.
- ✓ Use is down six to eight percent through voluntary conservation.
- ✓ City Ordinance controlling water use went into effect on August 1, 1990.
- ✓ If 1991 is dry, City will continue current programs.

**San Benito County Water Conservation and Flood Control District\***

Population: 0

Irrigated

Acres: 37,000

Demand: 45,000 AF

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\* New listing. August 1990 data only.

Supply: CVP -- 21,900 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ The Districts normal operation requires 40,000 AF for irrigation, and 8,000 AF for recharge.
- ✓ An estimated 25,000 people benefit from District operation.
- ✓ If 1991 is dry, growers will pump more ground water to make up for any import lost.

#### **San Juan Bautista, City of**★

Population: 1,600

Irrigated

Acres: 0

Demand: 370 AF

Supply: Ground Water -- 370 AF

- ✓ City has three wells, one is leased to grower.
- ✓ If 1991 is dry, the City Council may initiate a water conservation ordinance in lieu of voluntary conservation.

#### **Sunnyslope Water District**

Population: 9,400

Irrigated

Acres: 30

Demand: 2,000 AF

Supply: Ground Water -- 2,000 AF

- ✓ The District has a conservation program that includes no lawn watering between 9:00 a.m. to 5:00 p.m., no filling swimming pools, and voluntary conservation in other areas.
- ✓ If supply is short, the District would look to Hollister first.

#### **August 1990 Update**

- ✓ The Conservation Ordinance is working well -- the District achieved demand reductions in June of 37 percent and in July of 27 percent.
- ✓ If 1991 is dry, the District can extend its ordinance and could increase its number of wells.

## **San Bernardino County**

#### **HI Desert Water District (Yucca Valley)**

Population: 15,000

Irrigated

Acres: 0

Demand: 1,700 AF

Supply: Ground Water -- Unknown AF

- ✓ The water table is very low near bedrock.
- ✓ The District is enforcing a water conservation ordinance with restricted outdoor use to reduce demand.

#### **August 1990 Update**

- ✓ The District is meeting conservation goals -- eight percent demand reduction.
- ✓ District wishes to discuss water banking and other aspects of utilizing ground water potential.
- ✓ If 1991 is dry, the District will impose rationing depending on ground water levels.

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★ New listing. August 1990 data only.

### **Southern California Water Company (Barstow)**

Population: 34,000

Irrigated

Acres: 0

Demand: 9,000 AF

Supply: Ground Water -- 9,000 AF

- ✓ The Company doesn't have a problem at this time, however, it isn't sure of the future. Two wells have been shut down because of water quality.
- ✓ The Company plans three new wells and distribution system improvement.
- ✓ The Company encourages conservation.
- ✓ Investigating future water purchases from a neighboring developer.

### **August 1990 Update**

- ✓ The community is meeting its 12 percent demand reduction goal.
- ✓ If 1991 is dry, the Company will put standby wells on-line and initiate stricter demand reduction measures.

## **San Diego County**

### **Ramona Municipal Water District**

Population: 31,000

Irrigated

Acres: 3,919

Demand: 12,146 AF

Supply: Lake Ramona -- 7,000 AF

The Metropolitan Water District  
of Southern California -- 12,200 AF

- ✓ Ground water quality precludes use.
- ✓ Lake Sutherland is empty.
- ✓ The District has mandatory conservation including outdoor use restriction in place since June 1989.

### **August 1990 Update**

- ✓ The District reclaimed 365 AF of water, which was used for irrigation last year.
- ✓ District has met its conservation goal for domestic use, but its agricultural use increased by 21 percent.
- ✓ If 1991 is dry, the District will (1) limit new connections, (2) increase conservation programs, and (3) cut water related services.

## **San Francisco County**

### **San Francisco Water Department**

Population: 2.3 Million

Irrigated

Acres: 0

Demand: 325,000 AF

Supply: Current Storage (May 1990): Local -- 120,000 AF  
Hetch Hetchy -- 375,000 AF

- ✓ SFWD supplies water to San Francisco and 33 other cities in San Mateo, Alameda and Santa Clara Counties.
- ✓ SFWD has adopted a 25 percent systemwide reduction goal based on 1988 use and an excess use charges would be imposed to motivate compliance.

✓ SFWD is contracting to develop a comprehensive conservation program for all schools in the service area.

✓ If current efforts prove inadequate, SFWD may try to purchase water.

**August 1990 Update**

Not Available

## **San Joaquin County**

### **North San Joaquin Water District**

Population: 0

Irrigated

Acres: 52,000

Demand: 8,000 AF To Be Met By District Wells.

Supply: Ground Water -- As Needed

✓ The District uses surface water supplied by EBMUD when available. No water available for the last four years.

✓ When water is unavailable, growers use ground water from private wells.

✓ If 1991 is dry, the District will lower pump bowls and pump ground water.

**August 1990 Update**

Not Available

### **South San Joaquin Irrigation District**

Population: 0

Irrigated

Acres: 60,000

Demand: 269,000 AF

Supply: Ground Water -- 5,200 AF  
Stanislaus River -- 100,000-300,000 AF

✓ Demand is the average of the last three nondrought years.

✓ Ground water supply is the average of the last three years.

✓ Stanislaus River supply depends on the allotment from New Melones Reservoir.

✓ The District has an on-going conservation program, with rotation cycles extended from 10 days to 12 days. Tail water runoff and spills are strongly discouraged.

✓ Private irrigation wells have been located and may be rented to increase supply.

**August 1990 Update**

Not Available

### **Stockton, City of**

Population: 80,000

Irrigated

Acres: 0

Demand: 19,000 AF

Supply: Ground Water-- 16,000 AF  
New Hogan Reservoir -- 3,000 AF

✓ On April 9, 1990, the City adopted an ordinance reduction of water consumption by 20 percent of 1987 use.

✓ The City will increase ground water use if problems develop.

✓ A public information effort uses schools, television, radio, busses, and newspapers to spread drought information.

#### **August 1990 Update**

- ✓ With a conservation goal of 20 to 25 percent, an 18 percent reduction in demand was achieved.
- ✓ If 1991 is dry, the City will consider rationing.

#### **Stockton East Water District**

Population: 200,000

Irrigated

Acres: 70,000

Demand: 260,000 AF

Supply: Ground Water-- 240,000 AF  
New Hogan Reservoir -- 20,000 AF

- ✓ Extensive use of ground water may produce water quality problems, perhaps as great as a 25 percent increase in chlorides.
- ✓ Voluntary conservation to reduce demand by 20 percent of 1987 use should soon be required by the County of San Joaquin.
- ✓ A public education program includes schools, radio, television, busses, and newspaper advertisements.

#### **August 1990 Update**

- ✓ City of Stockton and California Water Service Company have a conservation goal of 20 percent and achieved 18 percent.
- ✓ An unknown amount of land did go fallow due to the short water supply.
- ✓ If 1991 is dry, the District will depend on additional supply via a conveyance system from the Stanislaus River that is to be completed by June 1991.

### **San Luis Obispo County**

#### **Cambria Community Services District**

Population: 5,500

Irrigated

Acres: 0

Demand: 800 AF

Supply: Ground Water -- 800 AF

- ✓ District depends on San Simeon and Santa Rosa Creeks and may have problems during late summer.
- ✓ A Water Waste Ordinance is in force.
- ✓ Outdoor water use is restricted to two days a week. Tighter restrictions are being considered.
- ✓ Ultra-low-flow toilets will be required in all new construction and in existing buildings when sold.

#### **August 1990 Update**

- ✓ The District is meeting its conservation goals, achieving a 25 percent reduction in demand.
- ✓ If 1991 is dry, the District will impose more restrictive conservation goals.

#### **Morro Bay, City of**

Population: 10,000

Irrigated

Acres: 0

Demand: 1,816 AF

Supply: Ground Water -- 1,500 AF

- ✓ The City is cutting demand to match supply. Mandatory conservation restricts all outdoor use.
- ✓ City may need emergency water supplies in the summer/fall.
- ✓ Conservation has been used to supply water for all development since 1982. The City is searching for new water resources.

**August 1990 Update**

- ✓ City is not meeting any of its conservation goals, in fact, it is getting worse.

**Paso Robles, City of**

Population: 17,000

Irrigated

Acres: 0

Demand: 4,590 AF

Supply: Ground Water -- 4,590 AF

- ✓ City promotes voluntary conservation for all use.

**August 1990 Update**

Not Available

**San Luis Obispo, City of**

Population: 40,000

Irrigated

Acres: 0

Demand: 8,500 AF

Supply: Ground Water -- 1,382 AF  
 Whale Rock Reservoir -- 2,560 AF  
 Salinas Reservoir -- 1,172 AF

- ✓ The City has instituted mandatory conservation with a targeted demand reduction of 35 percent.
- ✓ The City is drilling another well and investigating the use of desalting.

**August 1990 Update**

- ✓ The City is exceeding its 35 percent conservation effort by 10 percent -- total 45 percent!
- ✓ If 1991 is dry, the City may turn to desalting and/or additional ground water.

**San Luis Obispo, County of**

Population: 80,000

Irrigated

Acres: 0

Demand: 20,000 AF

Supply: Ground Water -- 3,400 AF  
 Lopez Lake -- 30,600 AF  
 Salinas Reservoir -- 6,000 AF  
 Whale Rock Reservoir -- 3,000 AF

- ✓ The County is on a voluntary conservation program with all outdoor use restricted.
- ✓ Lopez Lake was at 55 percent of capacity in May 1990.
- ✓ Salinas and Whale Rock supply is from the City of San Luis Obispo.

**August 1990 Update**

Not Available

### **San Simeon Acres Community Services District.**

Population: 200 Local

Irrigated

Acres: 0

Demand: 90 AF

Supply: Ground Water -- 90 AF

✓ Mandatory water conservation is in effect; no outdoor watering.

✓ The District adopted a retrofit program, replacing all toilets with ultra-low-flow fixtures with a total cost \$200,000.

#### **August 1990 Update**

Not Available

## **San Mateo County**

### **Citizens Utility Company**

Population: 5,000

Irrigated

Acres: 0

Demand: 520 AF

Supply: Ground Water -- 480 AF

Montana Creek -- 50 AF

✓ A voluntary conservation program is in place, promoted through mailers, press releases and kits.

✓ The system is in danger of running out of water during weekends.

#### **August 1990 Update**

✓ Montana Creek diversion is down 33 percent and is replaced as needed with ground water.

✓ Conservation has reduced demand 15 percent.

✓ If 1991 is dry, Company has three options: (1) ration supply, (2) develop additional wells, and (3) purchase from adjacent system.

## **Santa Barbara County**

### **Buellton Community Services District**

Population: 3,200

Irrigated

Acres: 0

Demand: 1,100 AF

Supply: Ground Water -- As Needed

✓ The District doesn't foresee any problem.

✓ Demand reflects a ten percent reduction from 1989 use.

✓ The District is considering an ordinance setting forth conservation measures.

#### **August 1990 Update**

Not Available

### **Carpenteria County Water District**

Population: 15,000

Irrigated

Acres: 3,580

Demand: 6,500 AF  
Supply: Ground Water -- 3,271 AF  
Lake Cachuma -- 1,863 AF

- ✓ The District is currently under mandatory conservation with a target of 20 percent reduction.
- ✓ Rationing is coming.
- ✓ There is a moratorium on new services.

**August 1990 Update**

- ✓ Available supplies are diminishing.
- ✓ The District has achieved a 20 percent urban and agricultural demand reduction with a districtwide conservation program that is backed-up with economic penalties.
- ✓ If 1991 is dry, the District will have to have additional demand reduction and greater ground water use.

**Goleta Water District**

Population: 80,000

Irrigated

Acres: 2,500

Demand: 10,500 AF

Supply: Ground Water -- 4,000 AF  
Lake Cachuma -- 6,700 AF

- ✓ The District is under mandatory conservation, installing ultra-low-flow toilets and shower heads, with a target of 15 percent demand reduction.

**August 1990 Update**

- ✓ The District has achieved a 40 percent reduction in urban demand and 18 percent in agricultural demand.
- ✓ The District will try to carry over a minimum of 700 AF in Cachuma Reservoir.
- ✓ If 1991 is dry, District will continue present action and expand its use of reclaimed water.

**La Cumbre Municipal Water Company**

Population: 4,600

Irrigated

Acres: 100

Demand: 1,710 AF

Supply: Ground Water -- 1,450 AF  
Lake Cachuma -- 200 AF

- ✓ The Company is operating under Phase II of its conservation plan which includes restricted outdoor use and no new landscaping.
- ✓ Lake Cachuma supply is 20 percent below entitlement.
- ✓ The Company has a retrofit credit program -- \$80 credit for low-flush toilet installation.

**August 1990 Update**

- ✓ The Company is achieving about 30 percent reduction in demand under its current conservation program.
- ✓ If 1991 is dry, the Company will depend on continued conservation, desalting, and SWP emergency supplies.

**Lompoc, City of**

Population: 33,000

Irrigated

Acres: 0

Demand: 5,526 AF (Low)

Supply: Ground Water -- 5,526 AF

- ✓ The City targeted a 10 percent conservation goal and is presently at 11.8 percent.
- ✓ For this year, the City has no major problems.
- ✓ The City is adding one well.

**August 1990 Update**

Not Available

**Mission Hills Community Storage District**

Population: 3,400

Irrigated

Acres: 0

Demand: 690 AF

Supply: Ground Water -- 690 AF

- ✓ The District sent customers letters establishing a goal of ten percent demand reduction.
- ✓ Voluntary conservation is achieving a six to eight percent demand reduction.
- ✓ The District has no problem at this time.

**Montecito Water District**

Population: 11,000

Irrigated

Acres: 0

Demand: 4,500 AF

Supply: Ground Water 750 AF  
Fox Creek 50 AF  
Dalton Tunnel 300 AF  
Varneson Lake 800 AF  
Lake Cachuma 1,850 AF

- ✓ Lake Cachuma allotment was reduced by 45 percent.
- ✓ Mandatory restriction on outside use were imposed.
- ✓ Rationing aims at a 17 percent demand reduction.

**August 1990 Update**

- ✓ District is achieving a 24 percent demand reduction.
- ✓ If 1991 is dry, the District will reduce its demand further with increased rates and penalties, use SWP emergency supply, pump additional ground water and use reclaimed water for public landscape irrigation.

**Santa Barbara, City of**

Population: 83,000

Irrigated

Acres: 0

Demand: 8,927 AF

Supply: Ground Water -- 2800 AF  
Lake Cachuma -- 7,609 AF  
Lake Gibraltar -- 500 AF

- ✓ The City is reducing demand 45 percent with mandatory conservation including no outdoor water use except from a pail or bucket.
- ✓ 2,200 AF from Lake Gibraltar was received in 1989 City water year.

**August 1990 Update**

- ✓ The City continues to make a 45 percent reduction in demand.
- ✓ City has increased ground water use to about 2,800 AF to 3,000 AF. Lake Gibraltar's contribution was reduced to about 500 AF.

- ✓ Ionics, Inc. has been selected to develop a desalter for the City. A contract is expected in September.
- ✓ If 1991 is dry, the City will continue conservation, and depend on SWP emergency supply to augment its local sources to meet its reduced demand.

#### **Santa Maria, City of**

Population: 55,000

Irrigated

Acres: 0

Demand: 12,800 AF

Supply: Ground Water -- 12,800 AF

- ✓ A voluntary conservation program is in place.
- ✓ The City has no problem for 1990.

#### **August 1990 Update**

Not Available

#### **Santa Ynez River Water Conservation District.**

##### **Improvement District No. 1**

Population: 7,000

Irrigated

Acres: 4,300

Demand: 8,000 AF

Supply: Ground Water -- 5,000 AF

Lake Cachuma -- 2,400 AF

- ✓ The stage one, voluntary water conservation program is in place; with 10 to 15 percent demand reduction goal.
- ✓ Outdoor watering is restricted with no watering between 10:00 a.m. to 4:00 p.m.
- ✓ The District is asking growers to restructure irrigation schedules to help relieve peak demand.

#### **August 1990 Update**

- ✓ The District, through conservation, has reduced its demand by 20 to 25 percent.
- ✓ Ground water use has increased to offset the reduction in Cachuma Reservoir supply.
- ✓ If 1991 is dry, additional wells will be developed.

#### **Solvang Municipal Improvement District**

Population: 4,100 Permanent

7,000 Tourists On Weekends

Irrigated

Acres: 0

Demand: 2,080 AF

Supply: Ground Water -- 1,530 AF

Imported -- 500 AF

- ✓ Imported waters from the Santa Ynez River Water Conservation District, Improvement District No. 1.
- ✓ The conservation goal is ten percent voluntary reduction on residential and commercial users and ten percent mandatory reduction on turf users such as golf courses.

#### **August 1990 Update**

- ✓ The conservation effort has reduced total demand by five percent.
- ✓ If 1991 is dry, District would impose a 25 percent mandatory demand reduction as part of the Stage II conservation program.

#### **Summerland Community Water District**

Population: 1,800

Irrigated

Acres: 0

Demand: 400 AF

Supply: Lake Cachuma -- 220 AF  
Stored Ground Water -- 77 AF

- ✓ The District is reducing demand with mandatory conservation with a 25 percent goal.
- ✓ The District has a low-flow toilet rebate program.

#### **August 1990 Update**

- ✓ The District's conservation program has reduced demand 25 to 30 percent.
- ✓ District will use its Cachuma Reservoir allocation holding stored ground water in reserve.
- ✓ If 1991 is dry, the District will depend on desalting and emergency water supply from the SWP.

#### **Vandenberg Village Community Storage District**

Population: 8,000

Irrigated

Acres: 0

Demand: 1,500 AF

Supply: Ground Water -- 1,500 AF

- ✓ The District doesn't have a water supply problem.
- ✓ The District encourages water conservation.

#### **August 1990 Update**

Not Available

### **Santa Clara County**

#### **Aldercroft Heights County Water District**

Population: 276

Irrigated

Acres: 0

Demand: 105 AF

Supply: Springs -- 50 AF  
San Jose Water Company via  
Los Gatos Creek -- 55 AF

- ✓ Demand is expected to decline. Rates have double from \$31/400 cf to \$31/200 cf.
- ✓ Flow from springs are below normal. Purchases from San Jose Water Company increased.
- ✓ The 1989 earthquake destroyed about half of distribution system. About 10,000 feet of pipe has been replaced above ground.

#### **August 1990 Update**

Not Available

#### **Chemiketa Mutual Water Company**

Population: 380

Irrigated

Acres: 0

Demand: 140 AF

Supply: Moody Gulch -- 140 AF

- ✓ Since the 1989 earthquake Moody Gulch flow has doubled.

- ✓ As in the past three years, the Company will purchase water from San Jose Water Company if needed.

#### August 1990 Update

Not Available

### Santa Clara Valley Water District

Population: 1.4 Million

Irrigated

Acres: 32,000

Demand: 330,000 AF

Supply: Local Supply Including Surface  
and Ground Water 78,000 AF  
CVP-San Felipe 76,000 AF  
Hetch Hetchy Reservoir 50,000 AF  
SWP Entitlement 92,000 AF  
Yuba County Water Agency 29,000 AF

- ✓ CVP-San Felipe supply reflects a 50 percent deficiency.
- ✓ Hetch Hetchy supply reflects a 25 percent deficiency.
- ✓ Local reservoirs are at 15 percent of capacity compared to a normal of 50 to 80 percent.
- ✓ Current restrictions on use are 20 percent in North County and 25 percent in South County between April 1, 1990 and October 1, 1990.
- ✓ Financial incentives through rate structure vary from city to city.
- ✓ A ground water extraction charge imposed by the District has been increased.

#### August 1990 Update

- ✓ In June 1990, conservation achieved 30 percent demand reduction and in July 1990 achieved 25 percent.
- ✓ The systemwide conservation goal from April 1 to July 1 was 20 percent, and 21 percent was achieved.
- ✓ District has hired a media consultant and the Smothers Brothers to do a commercial, buying large amounts of radio and television time. The District attributes use reduction to people knowing there is a real problem.

## **Santa Cruz County**

### Central Water District (Aptos)

Population: 3,000

Irrigated

Acres: 0

Demand: 440 AF

Supply: Ground Water -- 440 AF

- ✓ Residents practice voluntary conservation.
- ✓ The District uses mailers, bill inserts and school presentations to promote conservation.
- ✓ Problems are not anticipated.

#### August 1990 Update

Not Available

### Citizens Utility Company (Felton)

Population: 4,000 (Estimated)

Irrigated

Acres: 0

Demand: 490 AF  
Supply: Ground Water, Spring, and Fall Creek -- 490 AF  
✓ Voluntary conservation program are in place.  
✓ Mailers, kits, signs, and school programs promote conservation.

**August 1990 Update**

Not Available

**Lompico County Water District**

Population: 1,400

Irrigated

Acres: 0

Demand: 90 AF

Supply: Ground Water -- 40 AF  
Lompico Creek -- 105 AF

- ✓ The District has a strict conservation program backed-up with a steep inverse price structure.
- ✓ The District used newsletters and outdoor advertising for conservation education.
- ✓ The District lost 40 percent of its storage capability and had other damage in the 1989 earthquake.

**August 1990 Update**

- ✓ Conservation goals are being met.
- ✓ If 1991 is dry, the District would continue with the same program.

**San Lorenzo Valley Water District**

Population: 18,000

Irrigated

Acres: 0

Demand: 1,600 AF

Supply: Ground Water -- 1,000 AF  
Local Streams -- 572 AF

- ✓ The District conservation plan has five stages from voluntary conservation to mandatory rationing.
- ✓ The District participates with other Districts in a school conservation program and sends bill mailings.

**August 1990 Update**

Not Available

**Santa Cruz, City of**

Population: 80,000

Irrigated

Acres: 0

Demand: 7,100 AF (April-October)

Supply: Ground Water -- 400 AF (April-October)  
Local Streams -- 5,300 AF (April-October)

- ✓ The City anticipates supply and demand to be about 78 percent of normal April-October.
- ✓ Voluntary conservation begins April 1, 1990. Mandatory rationing begins May 1, 1990.
- ✓ The City informs the people by using newsletters, press releases, PS announcements, talks shows, demonstration booths, and drought patrol.

**August 1990 Update**

- ✓ The conservation program is exceeding its 24 percent goal with savings of 33 percent.
- ✓ If 1991 is dry, City will continue with its present program plus rationing for business.

**Scotts Valley Water District**

Population: 8,500

Irrigated

Acres: 0

Demand: 1,300 AF

Supply: Ground Water -- 1,300 AF

- ✓ Iron, manganese and solvents are present in some wells.
- ✓ Major supply problems are not anticipated.
- ✓ Voluntary conservation is in place.
- ✓ Ground water levels are holding well.
- ✓ The District is participating in Water Awareness Week.

**August 1990 Update**

Not Available

**Soquel Creek Water District**

Population: 3,500

Irrigated

Acres: 0

Demand: 6,000 AF

Supply: Ground Water -- 6,000 AF

- ✓ No supply problems are expected.
- ✓ Voluntary conservation is in place.
- ✓ A fulltime information officer is active in educational programs.

**August 1990 Update**

Not Available

**Watsonville, City of**

Population: 44,000

Irrigated

Acres: 0

Demand: 6,800 AF

Supply: Ground Water -- 6,800 AF

- ✓ No supply problems are expected.
- ✓ Voluntary conservation is in-place.
- ✓ The City provided conservation kits, worked the County Water Agency in providing schools with a conservation program and put information with bill mail.
- ✓ A diversion from Corralitos Creek was interrupted by the 1989 earthquake. It will be repaired.

**Shasta County****Bella Vista Water District**

Population: 11,000

Irrigated

Acres: 3,300

Demand: 15,000 AF/Year

Supply: CVP 12,000 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ Voluntary conservation is in effect and mandatory rationing will be imposed, if needed.
- ✓ Three wells, on standby, contain iron and manganese quality problems.

#### **August 1990 Update**

- ✓ The District instituted second tier (mandatory rationing) in June and will impose third tier -- penalties -- if needed.
- ✓ The District imposed a surcharge on all use in excess of 75 percent of 1989 use.
- ✓ New service connections will be for indoor use only.
- ✓ Three standby wells are being used to augment supply.
- ✓ If 1991 is dry, the District would initiate rationing sooner and would drill additional wells.

#### **Centerville Community Service District**

Population: 2,258

Irrigated

Acres: 0

Demand: 1,560 AF

Supply: CVP -- 380 AF  
Shasta County Water Agency -- 800 AF

- ✓ CVP supply reflects a 50 percent deficiency on contract with Clear Creek Community Service District for 760 AF.
- ✓ The District will reduce demand through education.
- ✓ The District will increase supply by pumping from an old mine shaft, purchasing from a neighboring District or the City of Redding.

#### **August 1990 Update**

- ✓ The District is meeting use goals to-date.
- ✓ District mails water saving tips to all users in a newsletter.
- ✓ If 1991 is dry, the District would turn to mandatory rationing.

#### **Clear Creek Community Service District**

Population: 5,100

Irrigated

Acres: 3,000-4,000

Demand: 10,395 AF (Historic Use)

Supply: 7,270 AF

- ✓ Supply reflects a 50 percent deficiency from CVP.
- ✓ The District will reduce demand by rationing to 80 percent of last year's use with penalty for excess use.

#### **August 1990 Update**

- ✓ The conservation goal was 15 percent, and 30 percent was achieved.
- ✓ Irrigated area was reduced 25 percent.
- ✓ If 1991 is dry, the District would start conservation effort sooner.

#### **Shasta Community Service District**

Population: 1,850

Irrigated

Acres: 0

Demand: 645 AF

Supply: CVP -- 500 AF

- ✓ Reduce demand, if needed, by public education via mailed flyers.
- ✓ Will invoke mandatory rationing if needed.

#### **August 1990 Update**

- ✓ CVP supply reduce 50 percent to 500 AF.
- ✓ Voluntary conservation seems to be working.

- ✓ If 1991 is dry, the District would start with voluntary cut-back, switching to mandatory rationing, if needed.

#### **Shasta Dam Area Public Utility District**

Population: 11,500

Irrigated

Acres: 0

Demand: 2,140 AF/Year

Supply: CVP -- 2050 AF

- ✓ The District will reduce demand through leak correction and public education.
- ✓ CVP supply reflects a 25 percent deficiency.
- ✓ The District uses 450 AF of reclaimed water for industrial and irrigation use.

#### **August 1990 Update**

- ✓ Conservation goals are being met.
- ✓ If 1991 is dry, the District will institute mandatory rationing. If Shasta Lake level is lower the District will install another pump to lift water.

### **Solano County**

#### **Solano Irrigation District**

Population: 12,000

Irrigated

Acres: 56,000 AF

Demand: 160,000 AF

Supply:	Ground Water --	6,000 AF
	Lake Berryessa --	151,000 AF
	Reclaimed Water --	3,000 AF

- ✓ Conservation will be enforced by reduced allocations: 2.7 AF/AC for row crops and 2.0 AF/AC for trees and vines.
- ✓ The District provides conservation videos to elementary schools.

#### **August 1990 Update**

- ✓ The District is meeting its ten percent demand reduction goal.
- ✓ An estimated 8,000± acres are not being irrigated this year due to drought.
- ✓ If 1991 is dry, will continue with reduced allocations.

### **Sonoma County**

#### **Camp Meeker Water Company, Incorporated**

Population: 600

Irrigated

Acres: 0

Demand: Varies

Supply: Varies

- ✓ Both demand and supply are extremely variable. The Company could not provide data.
- ✓ Company has basic system problems exacerbated by drought. Its wells are nearly dry.
- ✓ The Company is trucking water.
- ✓ A water district will take over the Company.
- ✓ Company sends repeated mailings to make sure customers are aware of problems and the need for maximum conservation.

**August 1990 Update**

Not Available

**Sonoma County Service Area No. 34**

(Jenner Water Company)

Population: 150±

Irrigated

Acres: 0

Demand: No Estimate

Supply: Jenner Gulch. No measurement of diversion or use.

✓ There are plans to replace existing leaky system next year.

✓ Residents are conserving the maximum possible.

✓ Water is hauled by tanker when necessary.

✓ No supply problem is anticipated.

**August 1990 Update**

Not Available

**Stanislaus County**

**Ceres, City of**

Population: 20,000

Irrigated

Acres: 0

Demand: 6,200 AF

Supply: Ground Water -- 6,200 AF

✓ DPCP and manganese are in some wells.

✓ The City urges year round voluntary conservation.

✓ The City is planning a reservoir to help meet peak demand.

✓ City uses flyers to promote conservation, and participates in Water Awareness Week.

**August 1990 Update**

✓ Conservation has reduced use ten percent.

✓ If 1991 is dry, the City will initiate their conservation plan sooner and with greater intensity.

**Modesto Irrigation District**

Population: 0

Irrigated

Acres: 62,000

Demand: 217,000 AF

Supply: Ground Water -- 10,000 AF  
Tuolumne River -- 207,000 AF

✓ Ground Water is used as needed.

✓ The District will line canals to reduce leakage.

✓ The District is holding meetings with growers to explain conservation.

**August 1990 Update**

✓ Water allocations to farmers were restricted to 40" per acre.

✓ If 1991 is dry, District will reduce allocations, use more ground water and line canals to reduce leakage.

#### **Oakdale Irrigation District**

Population: 1,200

Irrigated

Acres: 60,000

Demand: 270,000 AF

Supply: Ground Water -- 20,000 AF

Water Rights Stanislaus River -- 225,000 AF

- ✓ The District promotes public awareness via the press, ditch tenders, and directors.
- ✓ The District is joining the Department of Water Resources' program to improve farm irrigation efficiency.

#### **August 1990 Update**

- ✓ Ground water is used to replace the reduced surface water supply. Crop loss is not expected.
- ✓ The District has no numeric conservation goals, however, grower cooperation has been good.
- ✓ The District could use financial assistance to repair leaks in pipe and canal systems because of loss of income from its hydroelectric plant during drought.
- ✓ If 1991 is dry, the District will continue with present program and replace lost surface supply with ground water.

#### **Oakflat Water District**

Population: 0

Irrigated

Acres: 3,000

Demand: 6,000 AF

Supply: SWP-- 2,850 AF

- ✓ Growers will practice conservation and fallow much of their annual cropland.
- ✓ The District is looking for additional supply.
- ✓ SWP supply reflects a 50 percent deficiency.

#### **August 1990 Update**

- ✓ Some growers are using ground water to augment supply.
- ✓ No estimate of crop losses is available at this time.
- ✓ If 1991 is dry, the growers will increase ground water use and/or take additional land out of production.

#### **Orestimba Water District**

Population: 0

Irrigated

Acres: 5,800

Demand: 17,400 AF

Supply: CVP 7,930 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ Water allocation (equal share per acre) will be reduced.
- ✓ Growers can take land out of irrigation.
- ✓ Better water management and irrigation techniques are encouraged.

#### **August 1990 Update**

- ✓ When possible, growers supplement reduced surface supply with ground water, or reduce the area irrigated to meet supply.
- ✓ Estimates of losses are unavailable.
- ✓ If 1991 is dry, the District will continue to promote conservation.

### **Patterson Water District**

Population: 0

Irrigated

Acres: 14,000

Demand: 42,000 AF

Supply: Ground Water -- 3,000 AF  
CVP/DMC -- 13,400 AF  
San Joaquin River -- 29,400 AF

- ✓ The District will reduce allocations to growers.
- ✓ Private wells will augment supplies.
- ✓ Cooperating with SCD on agricultural water conservation.

### **August 1990 Update**

- ✓ CVP allocation increased to 60 percent of entitlement.
- ✓ Reduced double-cropping has reduced demand allowing full allocation delivery. Estimate of losses is unavailable at this time.
- ✓ If 1991 is dry, the District will reduce allocation to growers.

### **Turlock, City of**

Population: 40,000

Irrigated

Acres: 0

Demand: 13,000 AF

Supply: Ground Water -- 13,000 AF

- ✓ The City has a program to cut peak use 20 percent.
- ✓ Conservation is promoted at schools and service clubs.
- ✓ The City has no apparent problem at this time.

### **August 1990 Update**

- ✓ Despite conservation efforts, the City has been unable to lower demand.
- ✓ If 1991 is dry, City will probably apply additional restrictions on peak use and landscape watering.

### **Turlock Irrigation District**

Population: 0

Irrigated

Acres: 160,000

Demand: 600,000 AF

Supply: Ground Water -- 80,000 AF  
Don Pedro Reservoir -- 405,000 AF

- ✓ The District will reduce water allotments (to 36" per acre) to match supply. Some growers may fallow some areas or change crops to match allotment. Some growers may pump additional ground water.
- ✓ The District distributes drought awareness brochures.
- ✓ The District increased water meter reading frequency to check water wasting.
- ✓ Some salinity problems have shown up in wells near the San Joaquin River.

### **August 1990 Update**

- ✓ The District is drawing more water from Don Pedro Reservoir to protect ground water.
- ✓ The District's experiencing "higher salinity" in ground water near the San Joaquin River.
- ✓ If 1991 is dry, District would depend on additional ground water use. Wells could run dry or become more saline.

## Sutter County

### South Sutter Water District

Population: 0

Irrigated

Acres: 44,000

Demand: 120,000 AF

Supply: Ground Water (Local Farmers) -- 15,000-17,000 AF

Local Streams -- 500 AF

Camp Far West Reservoir -- 85,000 AF

Import from NID -- 15,000-18,000 AF

- ✓ Supply appears to be adequate, purchases from Nevada Irrigation District are available if supply is insufficient, rationing and additional ground water will be used.

### August 1990 Update

Not Available

## Tulare County

### Alpaugh Irrigation District

Population: 321

Irrigated

Acres: 7,200

Demand: 19,000 AF

Supply: Ground Water -- 19,000 AF

- ✓ If demand out strips supply the District will ration and some land may be fallowed.
- ✓ Arsenic (Hs) and Hydrogen Sulfide (H<sub>2</sub>S) are causing some quality problems with ground water.
- ✓ The CVP Cross Valley Exchange program is not available this year.
- ✓ The District may increase supply by drilling additional wells.

### August 1990 Update

- ✓ There was an estimated 500 acre reduction in irrigated cotton and alfalfa.
- ✓ If 1991 is dry, the District will drill additional wells and crop pattern will be changed.

### Alta Irrigation District

Population: 0

Irrigated

Acres: 115,000

Demand: 300,000 AF

Supply: Ground Water -- 100,000 AF

Pine Flat Reservoir -- 86,750 AF

- ✓ Fifty percent of average is expected from Pine Flat Reservoir.
- ✓ Demand will be reduced by cutting individual allotments.
- ✓ Growers' wells will supplement supply.
- ✓ The District is providing public information with mailings to residents, press interviews, and speaking engagements.

### August 1990 Update

- ✓ Conservation goals are being met.

#### Atwell Island Irrigation District

Population: 0

Irrigated

Acres: 8,400

Demand: 24,000 AF

Supply: Ground Water -- As Needed  
CVP -- 0 AF  
Alpaugh ID -- 1,300 AF

✓ CVP supply was sold to Hills Valley Irrigation District.

✓ New wells may be needed.

#### August 1990 Update

✓ Some individual growers imported water from adjacent district -- 1,200 to 1,300 AF.

✓ If 1991 is dry, some land will be fallowed.

#### Delano-Earlimart Irrigation District

Population: 0

Irrigated

Acres: 56,600

Demand: 150,000 AF

Supply: Friant-Kern Class I (@ 72 Percent) -- 78,336 AF  
Friant-Kern Class II -- 0 AF

✓ Individual growers will use wells to fill-in supply.

✓ CVP water will be shared among all growers in proportion to area irrigated.

✓ Public Information is provided in a quarterly newsletter, at schools and land owner meetings.

#### August 1990 Update

✓ An estimated 2,500 to 5,000 acres of annual crop land has been fallowed.

✓ If 1991 is dry, the District will rely on ground water.

#### Exeter Irrigation District

Population: 0

Irrigated

Acres: 12,700

Demand: 30,000 AF

Supply: CVP -- 7,820 AF

✓ The District will allocate on a per acre basis.

✓ Growers will augment supply with individual private wells as needed.

✓ Some individual wells have gone dry and some wells are affected by salts.

✓ The District sends monthly bulletins on the best water utilization practices to agricultural customers.

#### August 1990 Update

✓ The Friant Kern allotment increased to from 7,200 AF to 7,820 AF.

#### Hills Valley Irrigation District

Population: 0

Irrigated

Acres: 2,800

Demand: 5,400 AF

Supply: CVP-- 2,000 AF  
Purchase -- 600 AF

✓ Supply will be augmented from individual growers' wells.

- ✓ 600 AF was purchased from Atwell Island Irrigation District.
- ✓ CVP supply reflects a 40 percent deficiency.
- ✓ The District has a public information program and attends farmers meetings.
- ✓ The District is attempting to trade with other CVP users who have access to ground water.

#### August 1990 Update

- ✓ Demand increased 370 AF.
- ✓ If 1991 is dry, farmers may have to abandon some crops.

#### Kaweah Delta Water Conservation District

Population: 0

Irrigated

Acres: 272,000

Demand: 798,000 AF

Supply: Kaweah River -- 100,000 AF  
           CVP Class I -- 26,000 AF  
           CVP Class II -- 0 AF

- ✓ This District wholesales water only. Retail districts and growers will use ground water to meet demand.
- ✓ CVP supply reflects a 28 percent deficiency.

#### August 1990 Update

- ✓ Rationing is working.
- ✓ If 1991 is dry, the District will continue current practices.

#### Lindmore Irrigation District

Population: 0

Irrigated

Acres: 27,000

Demand: 80,000 AF

Supply: CVP Class I -- 23,760 AF  
           CVP Class II -- 0 AF

- ✓ CVP Class I reflects a 28 percent deficiency; Class II reflects a 100 percent deficiency.
- ✓ Supply will be augmented by individual growers' wells.
- ✓ The District practices conservation on an ongoing basis.
- ✓ The District provides newsletters to keep growers informed.

#### August 1990 Update

- ✓ If 1991 is dry, the District will continue with its current practices.

#### Lindsay Strathmore Irrigation District

Population: 4,500

Irrigated

Acres: 12,700

Demand: 30,000 AF

Supply: CVP -- 19,800 AF

- ✓ CVP supply reflects a 28 percent deficiency.
- ✓ The District checks and meters often to note wasteful practices.
- ✓ The District is working to improve supply by removing boron and salts from ground water.
- ✓ The District will trade with Tulare Irrigation District and Wachumna Ditch for 5,000 AF from Kaweah River.

#### August 1990 Update

- ✓ If 1991 is dry, the District would continue with current actions.

### Lower Tule River Irrigation District

Population: 0

Irrigated

Acres: 86,000

Demand: 230,000 AF

Supply: Ground Water -- 180,000 AF

Tule River -- 20,000 AF

Friant-Kern Canal -- 44,100 AF

- ✓ Supply reflects a 100 percent deficiency Class II and a 28 percent deficiency Class I.
- ✓ The District expects to have sufficient supply if ground water holds up.
- ✓ Double-cropping will be reduced.
- ✓ The District implemented Water Awareness Week and sends mailers to growers.

### August 1990 Update

- ✓ If 1991 is dry, District would have to fallow some annual crop acreage to provide water for permanent crops.

### Orange Cove Irrigation District

Population: 0

Irrigated

Acres: 26,700

Demand: 37,380 AF -- (1.4 AF/Acre)

Supply: Ground Water -- Very Limited

Friant-Kern Class I -- 28,224 AF

Imported -- 3,617 AF

- ✓ Friant-Kern supply reflects a 28 percent deficiency.
- ✓ The District has about 80 to 90 percent permanent crops.
- ✓ Many growers have dry wells this year due to lack of recharge.
- ✓ The District has tightened water control to stretch supplies and is seeking exchange water.
- ✓ The District is in the process setting up a reclamation system to supply 700 - 1,000 AF.

### August 1990 Update

- ✓ Imported water is available from Tulare Irrigation District and Fresno.
- ✓ Conservation goals are being met.
- ✓ If 1990 is dry, the District will be able to carry some supply over.

### Pixley Irrigation District

Population: 0

Irrigated

Acres: 50,000

Demand: 135,000 AF

Supply: Ground Water -- 135,000 AF

- ✓ Agency uses CVP Class II water, when available, to recharge ground water. The District does not have a Class I entitlement.
- ✓ All growers practice conservation by using recovery systems, laser leveling, etc.
- ✓ The District wants to expand recharge efforts and would need more water to do so.
- ✓ The District supports Water Awareness Week and includes information concerning the drought in mailings to growers.

### August 1990 Update

- ✓ The only way to correct overdraft is to develop new supplies.
- ✓ If 1991 is dry, District would have to fallow annual crop land to have enough water for permanent crops.

**Porterville Irrigation District**

Population: 0

Irrigated

Acres: 17,000

Demand: 24,000 AF

Supply: Ground Water -- 8,500 AF  
CVP Friant-Kern -- 11,500 AF  
Tule River -- 4,000 AF

- ✓ Growers' wells supply ground water.
- ✓ CVP supply reflects a 28 percent deficiency, Class I.
- ✓ The District operates on an "on/off" schedule and increased prices to promote conservation.
- ✓ The District encourages efficient use of water.
- ✓ Educational materials are available on request.

**August 1990 Update**

- ✓ The District Conserves by restricting deliveries.
- ✓ No land has been left fallow yet.

**Saucelito Irrigation District**

Population: 0

Irrigated

Acres: 20,000

Demand: 50,000 AF

Supply: Ground Water -- 34,700 AF  
CVP Friant-Kern -- 15,300 AF

- ✓ Growers pump ground water directly.
- ✓ CVP supply reflects a 28 percent deficiency.
- ✓ Demand has been reduced through conservation already.
- ✓ District will obtain additional supply if located.

**August 1990 Update**

- ✓ Ninety percent of the conservation goals are being met.
- ✓ If 1991 is dry, the District will have to lower pump bowls.

**Springville Public Utility District**

Population: 1,200

Irrigated

Acres: 0

Demand: 450 AF

Supply: Ground Water -- As Needed  
Tule River -- 425 AF

- ✓ The District has one well for back-up, currently being reactivated.
- ✓ The District has a 30-day supply of water in a reserve reservoir.
- ✓ The District has an ongoing information program for both school and the public.
- ✓ The District's Drought Contingency Plan includes, reactivate back-up well, implement rationing, and trucking in water.

**August 1990 Update**

- ✓ Demand has increased from 425 AF.
- ✓ District is operating in Stage I of its conservation plan. Use is ten percent below what would be normal.

### **Terra Bella Irrigation District**

Population: 1,920

Irrigated

Acres: 12,500

Demand: 37,000 AF

Supply: Ground Water (Grower Wells) -- 1,500 AF  
CVP Friant-Kern -- 20,900 AF

- ✓ CVP supply reflects a 28 percent deficiency.
- ✓ Individual grower wells supply supplement supply.
- ✓ A variety of ground water quality problems have been identified.
- ✓ The District has extensive conservation program in continuous operation.
- ✓ The District is mailing newsletters reminding growers to conserve water.
- ✓ The District will exchange for additional water and drill replacement wells.

### **August 1990 Update**

- ✓ Conservation is working well.
- ✓ If 1991 is dry, action will depend on situation at that time.

### **Tulare Irrigation District**

Population: 0

Irrigated

Acres: 68,000

Demand: 150,000 AF

Supply: Ground Water -- As Needed  
CVP Friant-Kern Class I -- 20,400 AF  
CVP Friant-Kern Class II -- 0 AF  
Kaweah River (Terminus Reservoir) -- 0 AF

- ✓ CVP supply reflects a 32 percent Class I deficiency and a 100 percent Class II deficiency.
- ✓ The District allocates surface water deliveries when there is not enough for all demands.
- ✓ Grower wells supplement supply when needed.
- ✓ The District participates in Water Awareness Week.

### **August 1990 Update**

- ✓ 6,000 AF to 10,000 AF will be held in storage for pre-irrigation.
- ✓ If 1991 is dry, the District operation would be essentially the same with irrigation supply from ground water.

## **Tuolumne County**

### **Tuolumne Regional Water District**

Population: 5,000

Irrigated

Acres: 1,000

Demand: 1,125 AF

Supply: Ground Water -- 365 AF  
Lyons Reservoir -- 760 AF  
Reclaimed Water -- 3,000 AF

- ✓ Voluntary conservation was requested. If needed, it will become mandatory.
- ✓ Wells can be lowered to increase supply.
- ✓ The District provides local schools with water information programs.

### **August 1990 Update**

Not Available

### **Tuolumne County Water Systems**

Population: 23,000

Irrigated

Acres: 0

Demand: 19,000 AF

Supply: South Fork of Stanislaus River -- 19,000 AF  
(via Lyons and Strawberry Lakes)

- ✓ Lyons and Strawberry Lakes are the only supply source.
- ✓ The District reduced demand by conservation and will use rationing, if needed.
- ✓ The District may be able to buy PG&E water to augment supply, if needed.

#### **August 1990 Update**

Not Available

## **Ventura County**

### **Casitas Municipal Water District**

Population: 55,000

Irrigated

Acres: 3,500

Demand: 30,000-32,000 AF

Supply: Lake Casitas-- 22,000 AF  
Ground Water -- 20,000 AF

- ✓ The District is enacting water conservation ordinance.
- ✓ Lake Casitas is 60 percent of capacity and ground water may be insufficient.
- ✓ The District will probably have water shortage this summer.

### **Ventura, City of**

Population: 95,000

Irrigated

Acres: 0

Demand: 24,000 AF

Supply: Ground Water -- 10,300 AF  
Ventura River -- 1,500 AF  
Lake Casitas -- 8,900 AF

- ✓ The City is reducing demand with a strong mandatory conservation program with a target of 30 percent overall reduction.
- ✓ A strong public information program includes television, radio, newspaper, newsletters, hotline and presentations to service clubs, etc.
- ✓ Additional ground water pumping is not possible this year due to salinity intrusion.
- ✓ A new well is being developed in the Santa Paula Basin.

#### **August 1990 Update**

- ✓ The mandatory rationing program, begun on April 12, 1990, is achieving a 26 percent demand reduction.
- ✓ If 1991 is dry, the City's action is under debate by the City Council.

## Yolo County

### Dunnigan Water District

Population: 0

Irrigated

Acres: 7,000

Demand: 15,000 AF

Supply: Ground Water -- As Needed

CVP -- 9,500 AF

- ✓ CVP supply reflects a 50 percent deficiency.
- ✓ The District limits the duration of irrigation and application per acre.
- ✓ Individual growers can augment supplies with ground water via private wells.

### August 1990 Update

- ✓ District is achieving its conservation goal -- about a 30 percent reduction in demand.
- ✓ If 1991 is dry, the District will use additional ground water and reduce the area planted.

### Yolo County Flood Control & Water Conservation District.

Population: 2,000

Irrigated

Acres: 55,000 to 65,000 Acres

Demand: 210,000 AF

Supply: Cache Creek -- 0 AF

Clear Lake -- 0 AF

Indian Valley Reservoir -- 31,000 AF

- ✓ Domestic use is from Clear Lake will be served this year.
- ✓ This year, due to insufficient water, the District **will not operate** for agricultural use. Needs a minimum of 60,000 acre-feet to supply enough water (after loss) to make operation worthwhile. Customers and employees have been notified. A majority of customers have wells.
- ✓ District diverts tail-water to supply ditches to stretch supply.
- ✓ The District provides water information to newspapers, schools and customers. It cosponsors a water awareness poster contest and will have a booth at the County Fair.

### August 1990 Update

- ✓ Effects of the shut down will not be known until the end of the season.
- ✓ If 1991 is dry, District will shut down, except for needed office staff, as it did this year.

## **Summary of Water Conservation Activities by 206 Water Agencies**

The following water conservation information was obtained from direct survey and media reports on approximately 200 water agencies and communities. Of those included, 175 have water conservation programs. The survey does not cover all water agencies in the State, but was oriented toward agencies which have conservation programs. The information is tabulated alphabetically by county and alphabetically by water agency within the county.

Table A lists the 104 water agencies providing municipal supplies which responded to our inquiries: 30 agencies had conservation programs that are mandatory in some respect; 59 agencies had voluntary programs; and 15 agencies did not have any formal program on the date of inquiry.

Table B lists the 72 water agencies providing irrigation supplies which responded to our survey: 21 agencies had mandatory conservation programs; 34 agencies had voluntary programs; and 17 agencies had not instituted any program on the date of inquiry.

Twenty-nine water agencies appear on both tables; they serve both agricultural and municipal supplies. Thus, a net total of 147 agencies responded to the survey. Of these, 122 agencies had water conservation programs.

Table C lists 59 additional communities in Southern California: 53 of these were considered to have water conservation programs. This information has been compiled from media reports; it is not covered in depth in this report.

Of the 163 municipal agencies surveyed, 142 had conservation programs and 21 did not. There were 101 voluntary municipal programs and 41 mandatory.

Of the 72 agricultural districts surveyed, 55 had conservation programs and 17 did not. There were 34 voluntary programs and 21 mandatory, a higher ratio of mandatory programs in the agricultural industry than in municipalities.

For purposes of this report a conservation program is considered mandatory if there is some penalty for not abiding by its directives. This penalty can be economic (increased water rates, fines, etc.) or physical (such as a restriction of water supply quantity or pressure), or a combination of penalties such as discontinuance of service with an excessive water fee. The program is considered voluntary if penalties are not assessed. The last column of each table indicates the type of program the agency has in operation, "M" for mandatory, "V" for voluntary and blank if none is reported. After each "V" or "M" there is one of the following: a number, which indicates the percent of water demand or use "saved" as a result of the agency's conservation programs; a plus sign, indicating the agency has met or exceeded program goals; a minus sign, indicating that the goals were not met; or a zero, indicating that the program was not evaluated.

In all, the survey shows that 14,424,000 people in 39 counties and 2,636,000 acres of agricultural land in 23 counties were served by agencies which had conservation programs. The savings goals of the municipal water agency voluntary programs averaged 16 percent and ranged from 5

to 30 percent. Goals of the mandatory municipal programs averaged 25 percent, and ranged between 8 to 45 percent. Overall goals were achieved in about three-quarters of the municipal programs, with people doing somewhat better in achieving voluntary goals than mandatory.

There was a higher ratio of mandatory to voluntary programs in the agricultural industry than in municipalities. The savings goals of the voluntary agricultural water conservation programs averaged 17.5 percent and ranged from 10 to 25 percent. The mandatory program goals ranged between 10 and 30 percent and averaged 20 percent. The agricultural community performed admirably, with a 95 percent success rate in achieving the savings goals.

**TABLE A**  
**August 1990 Drought Survey Update**  
**Municipal Water Agencies**

County	Agency	Population	Conser- vation <sup>1</sup>
Alameda	East Bay MWD	1.2 Million	V 15%
Alpine	Markleeville WC	200-400	
Amador	Jackson Valley ID <sup>2</sup>	300-400	
Butte	Del Oro WC	9,500	V -
	Lime Saddle CSD	600	V 0
	Magalia CWD	650	M +
Calaveras	Angels Camp, City of	2,580	
	Calaveras CWD <sup>2</sup>	15,000	V 0
Colusa			
Contra Costa	Brentwood, City of	8,000	V +
	Contra Costa WD	350,000	V 16%
Del Norte	Hussey Ranch Corporation, CSD	40	M 0
El Dorado	El Dorado ID <sup>2</sup>	58,000	M +
Fresno	Fresno, City of	360,800	V +
	Fresno ID <sup>2</sup>	45,000	
Glenn	Glide WD <sup>2</sup>		
Humboldt			
Imperial			
Inyo			
Kern	Arden WC	1,050	V 0
	Tehachapi-Cummings CWD <sup>2</sup>	17,000	
Kings	Corcoran, City of	16,000	
Lake	Lower Lake CWD	2,600	M 20%
Lassen			
Los Angeles	Avalon, City of (Catalina)	2,500	M 10%

County	Agency	Population	Conser- vation <sup>1</sup>
Madera			
Marin	Bolinas Community PUD	1,800	V +
	Marin Municipal WD	168,000	V 23%
Mariposa	Mariposa PUD	1,500	V +
Mendocino	Fort Bragg, City of	6,000	V 0
	Laytonville CWD	1,000	V 0
	Redwood Valley CWD <sup>2</sup>	4,500	
Merced	Central California ID <sup>2</sup>	4,000	V 0
	Livingston, City of	7,800	M +
	Los Baños, City of	15,000	V +
	Merced, City of	53,500	V 0
	Planada Community SD	3,500	V +
	Winton WSD	6,800	
Modoc			
Mono	June Lake PUD	650	
	Mammoth CWD	5,000	
Monterey	California WSC (Salinas)	70,000	V 0
	Monterey FC&WCD <sup>2</sup>	175,000	
	Monterey Peninsula WMD <sup>2</sup>	105,000	M 30%
Napa	Napa, City of	60,000	V 10%
Nevada	Donner Lake Utility District	25,000	
	Nevada ID <sup>2</sup>	41,000	V 0
Orange			
Placer	Placer CWA <sup>2</sup>	70,000	
Plumas			
Riverside			
Sacramento	Sacramento, City of	340,000	M 20%
	Sacramento CWA <sup>2</sup>	20,000	V 0
	San Juan Suburban WD	190,000	V 0

County	Agency	Population	Conser- vation <sup>1</sup>
San Benito	Hollister, City of	21,000	M 8%
	San Juan Bautista, City of	1,600	V 0
	Sunnyslope WD	9,400	V 30%
San Bernardino	Hi Desert WD	15,000	M 8%
	Southern California WC (Barstow)	34,000	V 12%
San Diego	Ramona MWD <sup>2</sup>	31,000	M -
San Francisco	San Francisco Water Department	2.3 Million	M -
San Joaquin	Stockton, City of	80,000	V 18%
	Stockton East WD <sup>2</sup>	200,000	V 18%
San Luis Obispo	Cambria CSD	5,500	V 25%
	Morro Bay, City of	10,000	M -
	Paso Robles, City of	17,000	M 0
	San Luis Obispo, City of	40,000	M 45%
	San Luis Obispo County	80,000	V 0
	San Simeon Acres CSD	200	V 0
San Mateo	Citizens Utility Company	5,000	V 15%
Santa Barbara	Buellton CSD	3,200	V 10%
	Carpinteria CWD <sup>2</sup>	15,000	M 20%
	Goleta WD <sup>2</sup>	70,000	M 40%
	La Cumbre MWC	4,600	M 30%
	Lompoc, City of	33,000	V 12%
	Mission Hills CSD	3,400	V 6%
	Montecito WD	11,000	M 24%
	Santa Barbara, City of	83,000	M 45%
	Santa Maria, City of	55,000	V 0
	Santa Ynez River WC <sup>2</sup>	7,000	V 25%
	Solvang Municipal ID	11,100	V 5%
	Summerland CWD	1,800	M 30%

County	Agency	Population	Conser- vation <sup>1</sup>
Santa Barbara (Cont'd)	Vandenberg Village CSD	8,000	V 0
Santa Clara	Aldercroft Heights CWD	280	V 0
	Chemiketa MWC	380	V 0
	Santa Clara Valley WD <sup>2</sup>	1.4 Million	M 21%
Santa Cruz	Central WD	3,000	V +
	Citizens Utility Company (Felton)	4,000	V +
	Lompico CWD	1,400	M +
	San Lorenzo Utility WD	18,000	V 0
	Santa Cruz, City of	80,000	M 33%
	Scotts Valley WD	8,500	V 0
	Soquel Creek WD	35,000	V 0
	Watsonville, City of	44,000	V 0
Shasta	Bella Vista WD <sup>2</sup>	11,000	M 0
	Centerville CSD	2,260	V +
	Clear Creek CSD <sup>2</sup>	5,100	M 30%
	Shasta CSD	1,850	V 0
	Shasta Dam Area PUD	11,500	V +
Sierra			
Siskiyou			
Solano	Solano ID <sup>2</sup>	12,000	M 10%
Sonoma	Camp Meeker WC, Inc.	600	M 0
	Sonoma County Service Area No. 34	150	M 0
Stanislaus	Ceres, City of	20,000	V 10%
	Oakdale, ID <sup>2</sup>	1,200	V +
	Turlock, City of	40,000	V -
Sutter			
Tehama			
Trinity			

County	Agency	Population	Conser- vation <sup>1</sup>
Tulare	Alpaugh ID <sup>2</sup>	321	
	Lindsay-Strathmore ID <sup>2</sup>	4,500	V 0
	Springville PUD	1,200	V 0
	Terra Bella ID <sup>2</sup>	1,920	V +
Tuolumne	Tuolumne Regional WD <sup>2</sup>	5,000	V 0
	Tuolumne County Water Systems	23,000	V 0
Ventura	Casitas MWD <sup>2</sup>	55,000	V 0
	Ventura, City of	95,000	M 26%
Yolo	Yolo County FC&WCD <sup>2</sup>	2,000	V 0
Yuba			
GRAND TOTALS	Total 104 Agencies <sup>3</sup>	8,509,000	V=59 M=30
	Total 89 Agencies w/Conservation Programs <sup>4</sup>	8,140,000	

- Blank Box = No conservation program.  
M = Mandatory program.  
V = Voluntary program.  
Number = Percent water demand/use reduced.  
+ = Users met unspecified goal.  
- = Goals not met.  
0 = Program performance not evaluated.
- Serves both agricultural and municipal supplies.
- Twenty-nine agencies also serve agricultural water.
- Twenty agencies also serve agricultural water.

**TABLE B**  
**August 1990 Drought Survey Update**  
**Agricultural Water Agencies**

County	Agency	Acres	Conser- vation <sup>1</sup>
Alameda			
Alpine			
Amador	Jackson Valley ID <sup>2</sup>	3,500	
Butte			
Calaveras	Calaveras CWD <sup>2</sup>	1,000	V 0
Colusa			
Contra Costa			
Del Norte			
El Dorado	El Dorado ID <sup>2</sup>	5,530	V +
Fresno	Consolidated ID	150,000	
	Fresno ID <sup>2</sup>	195,000	
	James ID	23,500	
	Laguna ID	34,470	
	San Luis WD	58,000	
	Westlands WD	536,000	M +
Glenn	Glide WD <sup>2</sup>	7,750	M +
	Kanawa WD	15,000	M +
Humboldt			
Imperial			
Inyo			
Kern	Belridge WSD	52,000	
	Berrenda Mesa WD	37,150	M +
	Buena Vista WSD	50,000	M +
	Lost Hills WD	50,000	V +

County	Agency	Acres	Conser- vation <sup>1</sup>
Kern (Cont'd)	North Kern WSD	65,000	
	Tehachapi-Cummings CWD <sup>2</sup>	2,400	
	Wheeler Ridge-Maricopa WSD	86,610	V +
Kings	Devil's Den WD	6,000	V +
	Dudley Ridge WD	30,000	V +
	Lakeside IWD	27,000	V +
	Tulare Lake Basin WSD	170,000	M +
Lake			
Lassen			
Los Angeles			
Madera	Chowchilla WD	80,000	V 0
	Gravelly Ford ID	8,400	M +
	Madera ID	25,000	
Marin			
Mariposa			
Mendocino	Redwood Valley CWD <sup>2</sup>	3,300	
Merced	Central California ID <sup>2</sup>	143,000	V 0
	Merced ID	100,000	M +
Modoc			
Mono			
Monterey	Monterey FC&WCD <sup>2</sup>	210,000	
Napa	Monterey Peninsula WMD <sup>2</sup>	300	M 30%
Nevada	Nevada ID <sup>2</sup>	97,000	V 0
Orange			
Placer	Placer CWA <sup>2</sup>	10,800	
Plumas			
Riverside			
Sacramento	Sacramento CWA <sup>2</sup>	400	V 0
San Benito	San Benito CWC&FCD	37,000	
San Bernardino			
San Diego	Ramona MWD <sup>2</sup>	3,920	M -

County	Agency	Acres	Conser- vation <sup>1</sup>
San Francisco			
San Joaquin	North San Joaquin WD	52,000	
	South San Joaquin ID	60,000	M +
	Stockton East WD <sup>2</sup>	70,000	M 0
San Luis Obispo			
San Mateo			
Santa Barbara	Carpenteria CWD <sup>2</sup>	3,580	M 20%
	Goleta WD <sup>2</sup>	2,500	M 18%
	Santa Ynez River WCD, Improvement District No. 1 <sup>2</sup>	4,300	V 25%
Santa Clara	Santa Clara Valley WD <sup>2</sup>	32,000	M 21%
Santa Cruz			
Shasta	Bella Vista WD <sup>2</sup>	3,300	M 0
	Clear Creek CSD <sup>2</sup>	3,000	M 30%
Sierra			
Siskiyou			
Solano	Solano ID <sup>2</sup>	72,000	M 10%
Sonoma			
Stanislaus	Modesto ID	62,000	V 0
	Oakdale ID <sup>2</sup>	60,000	V +
	Oak Flat WD	3,000	V 0
	Orestimba WD	5,800	V 0
	Paterson WD	14,000	V 0
	Turlock ID	160,000	V 0
Sutter	South Sutter WD	44,000	V 0
Tehama			
Trinity			

County	Agency	Acres	Conser- vation <sup>1</sup>
Tulare	Alpaugh ID <sup>2</sup>	7,200	M 0
	Alta ID	115,000	V 0
	Atwell Island ID	8,400	
	Delano Earlimart ID	56,500	V 10%
	Exeter ID	12,700	V 0
	Hills Valley ID	2,800	V 0
	Kaweah Delta WCD	272,000	
	Lindmore ID	27,000	V 0
	Lindsay-Strathmore ID <sup>2</sup>	12,700	V 0
	Lower Tule River ID	86,000	V 0
	Orange Cove ID	28,000	V 0
	Pixley ID	50,000	M 0
	Porterville ID	17,000	V +
	Saucelito ID	20,000	V 0
	Terra Bella ID <sup>3</sup>	12,500	V +
	Tulare ID	68,000	V 0
Tuolumne	Tuolumne Regional WD <sup>2</sup>	1,000 <sup>3</sup>	V 0
Ventura	Casitas MWD <sup>2</sup>	3,500	V 0
Yolo	Dunnigan WD	7,000	M 10%
	Yolo County FC&WCD <sup>2</sup>	55,000	V 0
Yuba			
GRAND TOTALS	Total 72 Agencies <sup>4</sup>	3,839,000	V = 34 M = 21
	Total 55 Agencies w/Conservation Programs <sup>5</sup>	2,636,000	

- Blank = No conservation program.  
M = Mandatory program.  
V = Voluntary program.  
Number = Percent water demand/use reduced.  
+ = User met unspecified goal.  
- = Goals not met.  
0 = Program performance not evaluated.

- Served both agricultural and municipal supplies.
- Reclaimed water.
- Twenty-nine agencies also serve municipal water.
- Twenty-two agencies also serve municipal water.

TABLE C

**Southern California Agencies Practicing Conservation**  
**As Reported In The Los Angeles Times On April 1, 1990<sup>1</sup>**

County	Community	2	Population	Conservation <sup>3</sup>
Imperial	Brawley		115,700	
	Calipatria		3,000	V
	Calexico		19,600	V
	El Centro		31,600	V
	Imperial		51,000	V
	Westmoreland		2,000	V
Los Angeles	Agoura Hills	✓	19,400	M
	Arcadia		49,100	V
	Bell	✓	28,200	V
	Calabassas	✓	N/A	
	Compton		93,000	V
	Culver City		41,000	V
	Hawthorne	✓	67,400	V
	Huntington Park	✓	51,200	V
	Irwindale	✓	1,200	V
	Lomita	✓	20,300	V
	Long Beach	✓	419,800	
	Los Angeles	✓	3,400,500	V
	Lynwood	✓	53,700	V
	Mission Hills		N/A	V
	Monterey Park		64,600	V
	Palmdale		45,800	M
	Paramount	✓	44,400	V
	Pasadena	✓	132,200	V
	Pico Rivera	✓	57,300	V

County	Community	2	Population	Conservation <sup>3</sup>
Los Angeles (Cont'd)	Santa Monica	✓	96,500	M
	South Gate	✓	79,200	V
	Torrance	✓	142,200	V
	West Hollywood	✓	38,400	M
Orange	El Toro	✓	N/A	V
	Fullerton	✓	111,700	
	Huntington Beach	✓	188,700	V
	Irvine	✓	100,500	
	Laguna Beach	✓	24,600	V
	San Clemente		39,100	M
	Trabuco Canyon		N/A	V
	Tustin	✓	46,800	V
	Westminster	✓	73,300	M
Riverside	Big Bear Lake		N/A	M
	Cathedral City		29,000	M
	Corona	✓	61,000	V
	Norco	✓	25,200	V
	Palm Springs		32,000	M
	Rancho California	✓	N/A	V
	Riverside	✓	209,700	V
San Bernardino	Barstow	✓	22,350	M
	Chino Hills	✓	N/A	V
	Fontana		78,000	V
	Montclair	✓	25,800	V
	Ontario	✓	124,300	V
	Rancho Cucamonga	✓	114,954	V
	Redlands		59,800	V
	Rialto		64,300	

County	Community	2	Population	Conservation <sup>3</sup>
Ventura	Camarillo	✓	48,300	V
	Moorpark	✓	24,900	V
	Oxnard	✓	128,000	V
	Simi Valley	✓	99,800	V
	Ventura (San Buenaventura)		90,800	M
GRAND TOTALS	Total 59 Agencies		7,096,000	V = 42 M = 11
	Total 53 Agencies w/Conservation Programs		6,284,000	

1. Not included in March-April Survey.
2. Agency receiving a portion of its supply from The Metropolitan Water District of Southern California is indicated by a check mark (✓).
3. M = mandatory, V = Voluntary.